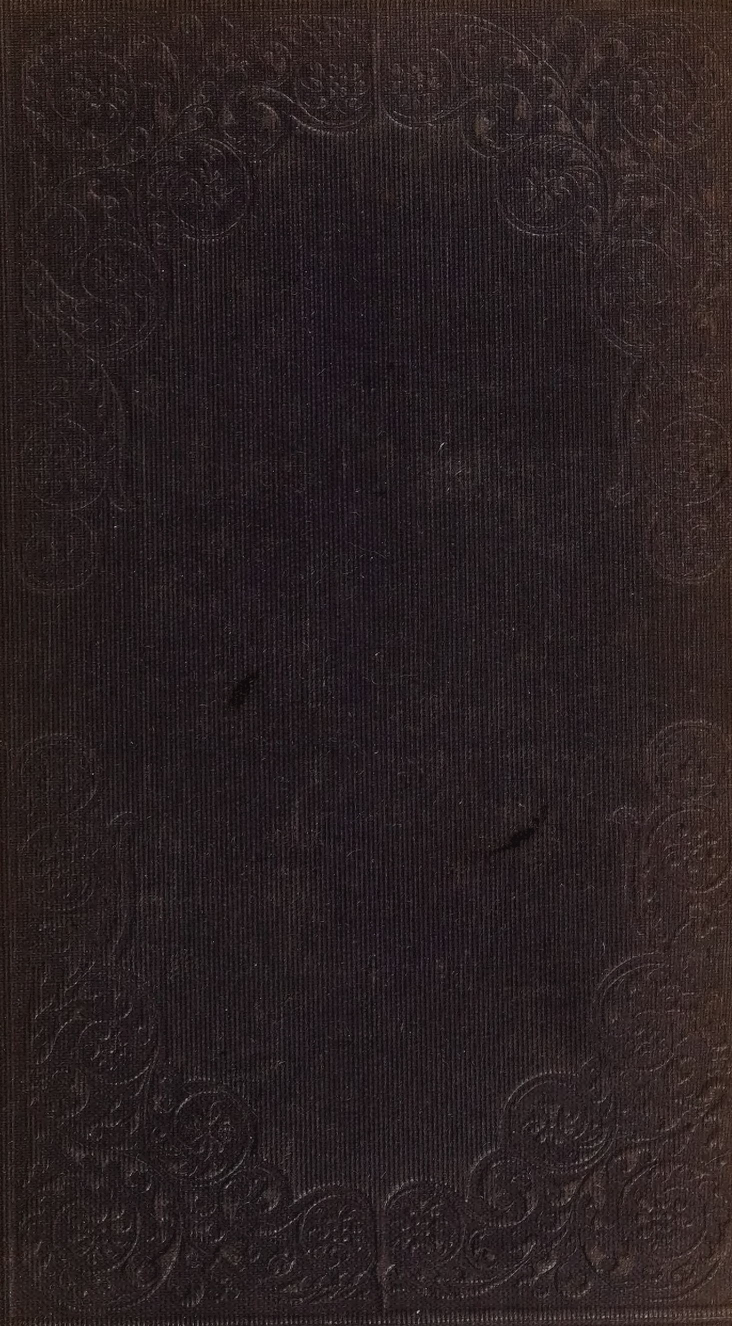

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VOL. XXXV. JANUARY—JUNE, 1857.

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RETROSPECT OF MEDICINE:

BEING

A HALF-YEARLY JOURNAL,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND
PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

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ETC.

VOL. XXXV. JANUARY—JUNE,
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A SYNOPSIS,

CONTAINING A SHORT ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THE FOLLOWING PAGES: SHOWING, AT A GLANCE, THE MOST IMPORTANT INDICATIONS OF TREATMENT PUBLISHED BY DIFFERENT WRITERS WITHIN THE LAST HALF-YEAR. (ARRANGED ALPHABETICALLY.)

DISEASES AFFECTING THE SYSTEM GENERALLY.

Cancer—Chloride of zinc should be made into a thick paste with some absorbent powder, such as gypsum, flour, starch, or the powder of althæa, or gum acacia, in the proportion of equal parts of chloride and powder; or two or even three of the former to one of the latter. It must be sufficiently viscid to prevent running, on account of the highly deliquescent nature of the chloride. Then as to the mode of employing this remedy, mark out the extent of the disease, and if the skin be entire, destroy it by the acid nitrate of mercury or strong nitric acid, and afterwards apply the paste; spread on lint of the proper size, covering the whole with cotton wool to absorb any moisture occasioned by the running of the dressing. The surrounding parts must be protected by a dressing thickly spread with spermaceti ointment, which may be mixed with as much chloroform as it will take up, to allay the burning pain caused by the action of the escharotic; an opiate will be required internally with the same object. Generous diet will be required, with wine or malt liquor, together with cod-liver oil and tonics, especially quinine, and the iodides of iron and arsenic, the latter with the view, if possible, of altering the cancerous diathesis. The following day vertical incisions must be made through the whitish eschar, and the dressing, spread on narrow strips of lint or calico, introduced by means of a probe to the bottom, and this must be continued daily, until the whole is destroyed. The tumour will thus be enucleated in about thirty days from the commencement, and the wound will heal very rapidly with a little simple dressing. (Dr. E. S. Haviland, p. 380.)

Besides the common mineral escharotics which are used in these diseases, there are others of a vegetable origin which have the advantage of painlessness. Among these may be mentioned oak-bark, the sanguinaria canadiensis and tannic acid. With local treatment, chlorine, either simply or in combination with soda, must be given internally as a tonic, and to stimulate the absorbents. The strength of the tannin solution may be about one ounce of the acid to half an ounce of water. This must be applied daily and freely to the ulcerated surface: it will not cause any pain, and in a week or ten days the slough will be cast off, leaving a granulating surface behind. The cavity left will not be so large as might be expected, because the application draws the sound parts so close around the slough, that they push it out further and further, so that the hollow is not so big as the tumour. Internally you may give fifteen minims of the chlorinated soda solution, in water three times a-day. (Mr. R. Barwell, p. 353.)

The destruction and enucleation of an ulcerated cancerous tumour may be effected by the use of solutions of chloride of zinc, so weak as to be all but painless, and without necessitating the confinement of the patient to bed for a single day. The proper strength of the solution is about one part of Sir W. Burnett's solution of chloride of zinc with six parts of distilled water. Two more parts of water may be added if much pain is caused. Pieces of lint soaked in this should be applied and renewed every two hours. (Mr. Stanley, p. 375.)

DROPSY.—Among cathartics elaterium and croton oil are in greatest favour. Elaterium is an hydragogue cathartic, but not so the croton oil, even when given in three minim doses; still it is by far preferable to elaterium, because it not only diminishes the quantity of fluid effused, but at the same time exalts rather than depresses the power of the absorbents. Elaterium is the most potent hydragogue which we possess, and induces the most speedy diminution of dropsical effusion, but it as certainly depresses the power of the absorbents, which more than outweighs its beneficial effect; croton oil on the other hand does more good by its stimulant effect upon the absorbents than by its mere cathartic power. It may be given daily in one minim doses for weeks together with the most salutary results. (Dr. G. Fife, p. 67.)

INTERMITTENT FEVERS.—In the treatment of these diseases apiol possesses all the advantages of the arsenical compounds without their inconveniences. Though inferior to quinine when the object is to cut short a dangerous paroxysm, yet it may be administered with the same advantage in all cases where it is not of much importance to put a stop to the paroxysms a day earlier or a day later, and is perfectly safe in administration. (Dr. Joret, p. 9.)

QUININE.—As a prophylactic, quinine is especially valuable while in unhealthy localities. It should be given in three or four grain doses twice a-day in a glass of sherry, and its use should be continued for fourteen days after leaving an unhealthy district. Its effects in tropical climates are very manifest, producing a refreshing and exhilarating effect on the system, which nothing can equal. (Dr. W. B. Baikie, p. 1.)

Rheumatism.—Dr. Fuller orders the whole of the affected limb to be encased in flannel, thickly sprinkled with precipitated sulphur; a bandage is applied over this, and the whole covered with oiled silk or gutta percha, which has the effect of increasing the warmth and confining the vapour of the sulphur, and also obviating the disagreeable odour. This bandage should be constantly applied—absorption takes place, the breath, urine, cutaneous exhalations, unmistakeably attest its presence. If the pain be situated where the above cannot be readily applied, substitute the compound sulphur ointment, which must be rubbed in for twenty minutes night and morning. When there is feverishness, acute pain, even when the limb is at rest, and the skin dry and inactive, no relief results from this treatment; but where there are no symptoms of active disease, and the pain is of a dull aching character, felt chiefly when the limb is in motion, and the skin acts freely, no external application proves so serviceable. (Dr. Fuller, p. 10.)

Chronic Rheumatism.—In very chronic cases, which have resisted the usual treatment, success will often follow if the limb be covered with sulphur, and over this a flannel bandage and wadding applied; this must not be disturbed for some days, so that the sulphur may become absorbed. (Dr. O'Connor, p. 11.)

Gout and Rheumatism.—Instead of the carbonates of soda and potash which are so constantly employed, use the silicate of soda, which, from its tonic action upon the digestive functions, and its diuretic properties, is said to be far superior. It facilitates the elimination of uric acid, and it may even render the urine alkaline. The benzoate of soda is also of great value; it transforms uric acid into hippuric acid, the combinations of which are extremely soluble, whilst those of uric acid are hardly soluble at all. (MM. Socquet and Bonjeau, p. 13.)

AFFECTIONS OF THE NERVOUS SYSTEM.

Chorea.—In cases when the usual anti-choreic medicines fail, you may try splints; in some cases they act so favourably that the patient is well in the course of a few days. (Mr. T. L. Monahan, p. 23.)

Toothache.—A few drops of chloroform on a bit of cotton, applied to the commencement of the meatus auditorius, often gives great relief. (M. Simon, p. 24.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

Aneurism.—In cases in which both the operations of Hunter and Wardrop have never been successful, as in aneurism of the subclavian artery, between and outside the scaleni, in which there is much known danger in the usual modes of treatment, Mr. Fergusson's plan of compression may be tried. The flat point of the thumb must be laid on the aneurism, and when the sac is emptied of fluid blood, the surfaces and supposed contents must be forcibly rubbed against each other; the fibrine will be displaced, and block up the distal end of the aneurism, and so a cure be effected. (Mr. Fergusson, p. 106.)

Ecraseur.—*Mode of applying, &c.*—The essential step in the use of this instrument obviously is, to form a peduncle, if the part does not already possess one. In a flat tumour on the surface, the best plan is, if possible, to raise it well up from the subjacent tissues, and pass several long curved needles in different directions across and under its base; a ligature must then be tied behind these, and thus a neck formed for the chain.

If the mass be very large, or, if it be so bound to the underlying tissues that it cannot be raised up, or, if it extend into a canal, as into the rectum, then the chain is first carried under the part in one of its diameters, and made to split it in two at its utmost depth, when each lateral part is, if necessary, treated as a separate tumour, as above recommended. When the chain is firmly in its place, to avoid inconvenience, the ligature may be cut away.

A superficial incision through the skin is sometimes advisable, as it offers great resistance. Or, to save integument, it may be reflected from the sides of the tumour, before the instrument is applied. Oiling the chain considerably facilitates its action. The instrument must be used with great gentleness, at the same time it must be held firmly, which is of much moment in the avoidance of hemorrhage, for which end it must likewise be used very slowly, allowing from a quarter of a minute to a minute to elapse between each movement. (Dr. G. H. Macleod, p. 97.)

Military Tourniquet.—This consists of an ordinary straight stay busk, of sufficient length to embrace the largest limb, and by a series of notches at both extremities, may be so reduced as to fit the smallest. The limb being surrounded by this, all that remains is to direct the pressure upon the artery, by means of a screw. The pads are made of box-wood, and the busk is covered with a sheathing of india-rubber, so as not to absorb moisture. (Mr. T. P. Salt, p. 105.)

Tumours of the Tongue.—*Removal by ligature.*—Take a handled needle with a slight curve and armed with a single stout ligature thread, well waxed and greased. At the junction of the further and inner borders of the tumour, but clearing its substance, pass the needle from below upwards, then withdraw it again, retaining the ligature in the form of a loop; this must be repeated at the anterior and inner angle of the tumour. The ends of the ligature are now to be brought round the anterior and posterior borders of the tumour, and passed through their respective opposing nooses at the dorsum, the latter well drawn down into the substance of the organs, and the former tied on the dorsum in a firm knot. The strangulation is perfect. (Mr. J. Wood, p. 108.)

NÆVUS.—The following caustic is recommended by Dr. Macke: corrosive sublimate, four parts; collodion, thirty parts; apply by means of a brush, and in three to six days the eschar will be thrown off. (p. 110.)

If too large to be ligatured or excised, inject repeatedly small quantities of the perchloride of iron, with larger quantities there is the risk of sloughing. The shrinking of the tissues will not be so great at the time as after the lapse of a few months. If the nævus be situated on some delicate part, as the eyelid, Mr. Bowman introduces the perchloride, by passing a thick silk ligature through its centre, previously soaked in the perchloride. To prevent the thread being squeezed dry in passing through the skin use a broad needle, and make a few punctures just around the entrance of the thread. The setons must be taken out the same evening; a very fine actual cautery may then be introduced into the nævus, to burn a small patch in its centre. (Mr. Bowman, p. 110.)

VARICOSE VEINS.—Compressing the vessel at various points, by passing a hare-lip pin beneath, and applying the twisted suture, is insufficient to cut off all channels of communication, excepting it excites subacute inflammation throughout the veins in the neighbourhood, and this end is far more safely attained by the application of caustic issues, which Mr. Skey has shown to be superior to any other mode of treatment at present known. The caustic recommended, is composed of three parts of quick lime, and two of caustic potash, made into a paste, with spirits of wine. In applying it, cut a small hole about the size of a split-pea, or a fourpenny piece, in adhesive plaster, put this exactly over the part, then apply the paste; in from ten to twenty minutes the pain will have ceased, and the paste must be removed. The issues must not be applied too closely one to another, for they approximate afterwards by the contraction of the skin. (Mr. H. Coote, p. 112.)

Mr. Erichsen's practice is to pass pins under these veins, generally in three places, for which purpose the vein must be lifted up, and the pins passed well under them, so as to avoid puncturing them; over each of these a figure of 8 suture must be applied. In about three or four days, he withdraws the pins, and divides the veins subcutaneously. In no instance have any bad effects followed this plan of treatment.. (Prof. Erichsen, p. 111.)

VASCULAR TUMOURS.—Elastic ligatures are much superior to inelastic ones in the removal of vascular tumours, &c. To apply it, the elastic thread must be stretched to its full extent, and tied in a single knot, it must then be slipped over the tumour, and tied by a double knot. Strangulation follows, and the tumour falls off in a few days. (Mr. F. A. Nesbitt, p. 114.)

AFFECTIONS OF THE RESPIRATORY ORGANS.

Asphyxia.—In asphyxia the brain is poisoned by the circulation of venous blood within its structure, and artificial respiration, which is the great resuscitating means, must be performed till the brain is again arterialized. But restoration of the action of the heart does not quickly follow well-performed artificial respiration, because the pulmonic heart is paralyzed by a mechanical cause: it is distended and engorged with venous blood. Artificial respiration partly tends to relieve this, but it is generally possible to relieve it more quickly by *jugular venesection;* this should be performed *as early as possible,* and the vein should be opened about an inch above the clavicle. The great danger is the entrance of air into the veins: this is only likely to occur during respiration, and it cannot so long as the veins are distended and full; therefore, as soon as the *active* regurgitation ceases (which the valves permit) the wound must be carefully closed, and artificial respiration immediately commenced. The escape of even 1 oz. of blood would afford very material relief. (Dr. J. Struthers, p. 54.)

Artificial respiration can only be certainly, effectually, and safely performed in the *prone* position. In the supine position the larynx is apt to be obstructed by the falling back of the tongue and epiglottis. Fluids may be fatally inhaled into the windpipe from the stomach or mouth, when inspiration is mechanical. All other measures are subsidiary: all which exclude respiration are destructive, and the *warm bath* is *doubly fatal*, first, by excluding rotation, and secondly, by promoting the circulation of carbonic acid. (Dr. Marshall Hall, p. 48.)

In cases of sudden choking, as from a morsel of food, place the patient, generally a child, between your knees, one knee (the right) pressing firmly on the stomach, and the other on the back; then place one hand on the back part of the thorax, and give a firm blow with the other on the sternum, the morsel will sometimes be expelled with force to a considerable distance. If in the midst of the asphyxia the excito-motor power fails, and the larynx is no longer spasmodically closed, employ the "Ready Method" to sustain life until a bougie can be made to push the morsel of food lower down in the pharynx or œsophagus. A firm scroll of cotton or linen, if carefully made and greased, or a thin bent tallow candle, might answer this purpose. (Dr. Marshall Hall, p. 50.)

Asphyxia of Still-born Infants.—1. Place the infant in the prone position. 2. Sprinkle the surface briskly with cold water. 3. Make gentle pressure on the back; remove it, turn the infant on the side, and again place it prone with pressure. 4. Rub the limbs with gentle pressure upwards. 5. Repeat the sprinkling with cold and hot water alternately. 6. Continue these measures, or renew them, from time to time, even for hours. (Dr. Marshall Hall, p. 39.)

If the vessels of the funis are beating, do not divide it, but give the infant a few smart smacks on the back; if there be no pulsation, separate immediately, and immerse for two or three minutes in a warm bath of 96° or 98°. It is dangerous to keep the infant in warm water for any length of time together; for it has been proved that animals will drown much more quickly in hot than in cold water. While in the bath, place a drop of spirit on the root of the tongue. If in three or four minutes these means do not succeed, artificial respiration must be resorted to. Wrap the child in warm flannel, put a bit of flannel over its mouth, and inflate the lungs by breathing into them, taking care that the nostrils are closed; then all hands must be removed, and gentle pressure made on the chest: this alternate action must be continued so long as there is the least tremulous pulsation of the heart. (Dr. Ramsbotham, p. 41.)

Asphyxia from Chloroform.—In a case where the usual means had failed to excite respiration, the prone position and rotation were afterwards tried with almost immediate success. When ammonia was inhaled and cold water now sprinkled on the face, inspiration was excited. It is very evident, that if the patient is to breathe, we must cause the fluids to flow out and the tongue to fall forwards, and this can only be accomplished with the patient in the prone position. (Correspondent of *Lancet*, p. 52.)

CATARRH.—Let the patient drink freely of some warm fluid, put on a warm great coat, and walk smartly till he feels himself perspiring, then turn homeward, continuing his pace quite up to his own door, and let him have a bed to get into the moment he gets home; or let him use the hot air bath, which is one of the most convenient and manageable of all diaphoretic remedies: all that is wanted is a spirit or gas lamp. and a roomy cloak of some air-tight material, fastened close at the neck. If these means fail, or in conjunction with them, opium in the form of Dover's powder is of all drugs the best, let the patient take about ten grains: with many persons it acts as a specific. Lastly, stimulant diaphoretics, such as ammonia, ether, ammoniacal salts, and camphor, especially the latter, often produce astonishing effects. A few drops of spirit of camphor may be taken on a piece of sugar, every four hours or so, or it may be given in the form of a draught, combined with salts of ammonia and potash. (Dr. Hyde Salter, p. 24.)

tried with advantage:—Extract of belladonna, half a drachm; tincture of aconite (Fleming's), four drachms; for an ounce and a half of soap liniment. Dr. Shearman gives nitrate of silver and opium with quinine and potash water, in one drachm doses; Mr. J. Frank recommends oxide of bismuth; and Hufeland writes favourably of nitrate of bismuth, in ten or twenty-grain doses. (p. 63.)

CRACKED TONGUE.—Apply a lotion composed of two scruples of borax, one ounce of glycerine, and four ounces of water; at the same time give the iodide of potassium and bark. (Dr. W. Brinton, p. 64.)

DYSENTERY.—Give a mixture consisting of a scruple of bismuth, ten grains of compound powder of kino, two drachms of mucilage, and an ounce of infusion of krameria, every six hours; at the same time attend carefully to the diet. Bismuth is also specially recommended in the diarrhœa of phthisis, typhoid fever, and of children. (Dr. W. Brinton, p. 64.)

Dysentery—Cholera.—Administer per anum a table-spoonful of common levigated charcoal, rubbed up with the white of an egg, which may be diffused in eight or ten ounces of chicken broth. This is often followed by perfect relief to the local symptoms, and consequently to the general fever. For this purpose, charcoal is deteriorated by exposure to the air, and probably that made from willow cork or sponge will be found most efficacious. In cholera, it is most beneficial at the commencement of the attack, but in all stages it is a beneficial adjuvant. (Dr. Wilson, p. 14.)

DYSPEPSIA.—Lactic acid may be advantageously substituted for pepsine in many cases of dyspepsia. It reduces animal fibre to a pulpy state in a much shorter space of time than does the so-called pepsine. It must be of chemical purity and uniform strength. It should be taken during a meal, in doses of from half a drachm to two drachms, in infusion of calumba or a little cinnamon water. (Dr. O'Connor, p. 420.)

Pepsine, Lactic Acid.—Though lactic acid possesses no power of digestion by itself, it plays a very important part in acidifying the gastric juice, and should on that account be mixed with the pepsine given medicinally, in about the proportion of two grains of hydrated lactic acid to fifteen of Boudault's pepsine. (Mr. W. S. Squire, p. 421.)

HARE-LIP, *New Suture for.*—Instead of the needle and twisted suture which are ordinarily employed, take a pair of small silver discs, each with an aperture in the centre, crossed by a portion of silver wire, in one immoveable, in the other attached by a small hinge, so as to admit of being moved up from the surface of the disc. Then take a needle armed with a double silk ligature, to the free ends of which the disc with the immoveable wire is attached, pass the needle and ligature through till the disc is brought up firmly against the lip: the needle may now be cut away, the second disc having first been passed over it; then by separating the ends of the ligature the wire may be closed down between them, and the ends of the ligature tied over it.

This ligature is applicable in cases where deep sutures are required, and where the quilled suture is customarily employed, as in the operation for lacerated perinæum. (Mr. A. J. Wood, p. 124.)

HEMORRHOIDS.—When large, first blister them, then apply the perchloride of iron to the denuded surface; by this means they shrink and soon disappear. (M. Thierry, p. 145.)

Internal piles are not dilated or varicose veins of the anus, for if cut across the hemorrhage is arterial not venous; and if tied there is no risk of phlebitis. External piles may be snipped off, and there is no danger of bleeding after the vein has once emptied itself; internal ones, if cut away, bleed continuously and profusely, and their hemorrhage, as just stated, is arterial not venous. (p. 135.)

The usual preliminaries of the operation having been observed, Mr. Salmon, of St. Mark's Hospital, passes a toothed tenaculum into the gut, with its teeth looking outwards, and seizes the pile which it is intended to tie; this is drawn downwards and held away from the margin of the sphincter, while the operator with the scissors makes a deep gash just at the margin of the juncture of skin and mucous membrane. The pile may be still further isolated by incisions at each side. A strong waxed silk ligature is now applied in the track of the deep wound; the ligatures are left long, and the piles not returned. The first dressing may be a compress of cotton wool; on the following morning a bread poultice may be substituted. As the pile is generally supplied by a single large artery at the upper part there is no danger of hermorrhage from the first free incision. (Mr. Salmon, p. 139.)

The écraseur will certainly supersede all other agents for the removal of external piles. It is also especially useful for the removal of pedunculated growths, and even deep-seated morbid growths after the integument is reflected from them. (Mr. W. D. Husband, p. 142.)

In removing hemorrhoidal tumours by the écraseur, give chloroform, then seize the piles by a vulsellum, apply the chain of the écraseur to a part or the whole according to the size and number of the tumours, and gradually tighten until they are removed. (Mr. A. T. H. Waters, p. 144.)

As a general rule we may say that that there is no danger from hemorrhage when piles are removed by the écraseur, but this is not universal, for in a case where it was used for the removal of internal piles, the patient passed four ounces of blood an hour and a half after the operation; some time after this twenty ounces of dark clot were passed. Opium and chloric æther were given, but the hemorrhage continued, and the patient died. (Mr. L. E. Desmond, p. 104.)

HERNIA.—*Expiratory method of reducing.*—The patient being placed in the usual position, and all necessary preliminary arrangements having been made, direct the patient to make a very full expiration, and thereafter to refrain as long as possible from making a fresh inspiration. During this, the operator must steadily attempt to reduce the hernia, relaxing his pressure when the patient is compelled to draw a fresh breath, and repeating the process, if necessary. The theory of this operation is simple; in the first place, it prevents the diaphragm and abdominal muscles from acting in concert, and so removes the chief obstacle to the reduction of hernia. Secondly, it weakens the muscular power of the body, and diverts it from the act of resistance. (Dr. Buchanan, p. 130.)

Inguinal Hernia, Radical cure of.—Wützer's instrument for this purpose, is composed of a cylinder of very hard wood, becoming conical at its blunt extremity. It contains a canal lined with metal, which conducts an elastic steel needle flattened on the point, and furnished with an immovable handle; a round opening near the point of the cylinder allows the needle to pass through, so that when the cylinder has been properly introduced into the canal, and pressure is made upon the handle, the needle sends its point along the interior of the cylinder, and piercing the structures immediately in front, emerges through the integument; a concave case of the same kind of wood is then fitted over this, and pressure regulated to any extent, by means of a screw. Before applying this instrument, the part must be carefully shaved, then carry the forefinger of the left hand into the canal, until the apex of invagination reaches the internal ring; the cylinder well oiled, must now be introduced, and the finger withdrawn, then pass the needle through the invaginated skin and the external integuments, apply the cover plate, and keep up gentle pressure. In a week or ten days the instrument may be removed, and the invaginated portion of the skin will be found adherent, and the cure complete. (Mr. C. Vaudin, p. 128.)

Strangulated Femoral Hernia.—Use a bistoury which differs in shape from the ordinary hernia knife; it has a long straight shaft, terminated by a blunt end. Close to the blunted end, and extending about three-eighths of an inch from it, is a very slightly concave cutting edge. The cutting edge of the instrument is introduced beneath the tissues forming the crural ring, guided by the index-finger of the left hand, with its flat surface in contact with the anterior surface of the hernial sac, and its edge inwards; the handle is then turned outwards, which brings the sharp edge of the bistoury upwards, and in contact with the tissues above it. In this manner they are freely divided, and the tip of the index finger follows the incision thus made. (Mr. J. Birkett, p. 130.)

HICCOUGH.—In obstinate cases, make forcible compression for a minute or two at the inner extremities of, or upon one or both clavicles. M. Geyser suggests that this may operate by its influence upon the phrenic nerve. (M. Geysers, p. 63.)

INTESTINAL OBSTRUCTION.—*Chronic.*—In this disease which is almost invariably dependent on disease implicating the large intestine, and generally at the upper part of the rectum, or sigmoid flexure, the performance of Amussat's operation will afford the required relief. It is comparatively easy to perform, from the great distension of the gut; it is of course only applicable in the chronic form of the disease. (Prof. Erichsen, p. 134.)

JAWS AND NECK, *Fistulous Openings about the.*—In sores and fistulæ in this situation, always carefully look out for old carious teeth: sometimes an old stump, with or without a sharp fang, will be causing all the mischief, and by extracting this, the sore will heal rapidly. (Mr. S. Smith, p. 117.)

These are frequently connected with carious teeth, and are never cured until the irritating body is removed; but they may also be from the irritation produced by wisdom teeth, when there is scarcely room for them; in these cases, the remedy is, to remove the second molar, and the opening soon heals up. (Dr. Crawford, p. 122.)

RECTUM, *Hemorrhage from.*—After operations on the rectum, instead of using lint to restrain the hemorrhage, introduce into the rectum a large plug of the finest jeweller's wool, and press it gently into the whole length of the wound. The wool must on no account be oiled, as it is by its loose absorbing texture, that it is so valuable. Styptics are never necessary, continued pressure is almost invariably found efficient. (Mr. Salmon, p. 145.)

Ulcerated Cancer of the Rectum.—For the relief of the dreadful pain caused by defæcation in this disease, and which alone is a principal cause of the great exhaustion, perform Amussat's operation. You relieve the pain, and remove the cause which would stimulate the the disease to make more rapid and extensive ravages than it otherwise would. (Prof. Erichsen, p. 133.)

Strictures of the Rectum and Œsophagus.—If non-malignant, these may be treated effectually with instruments, invented by Mr. Wakley; consisting of a flexible guide and four dilating tubes of about ten inches in length for the rectum, and twenty for the œsophagus; the guide being also longer for the latter tube. The guide is first introduced, and over this, the directors, which fit accurately, and must be used of progressively larger size. Mr.

Wakley also uses instruments for the dilatation of the os uteri, constructed on similar principles, but the dilators are shorter, and have an inverted cup-shaped rim to fit the os uteri. (Mr. T. H. Wakley, p. 168.)

SEA SICKNESS.—Give from ten to twelve drops of chloroform in water, and if necessary repeat it. It is said by Dr. Landerer, of Athens, to be a "sovereign remedy." The patient soon becomes able to stand up, and gets accustomed to the movements of the vessel. (Dr. Landerer, p. 430.)

TAPE-WORM.—Give half-drachm doses of the oleo-resin, prepared from the root stock of the *Lastræa Filix Mas*, to a child, or drachm doses to an adult, with an equal amount of sulphuric æther, rubbed up with an ounce of mucilage. This should be taken at five or six in the morning, on an empty stomach, and followed in about five hours with an ounce of castor oil. A drachm of the oleo-resin is equal to three drachms of the "powder" in effect. After the expulsion of the worm the patient should be put upon a a course of the tincture of the sesquichloride of iron in infusion of quassia. (Dr. W. H. Willshire, p. 362.)

Kameela, a native plant of India, is said to be much more efficacious than kousso, and is certainly much cheaper. It produces only the ordinary effect of a purging medicine and little or no griping. Dr. Gordon (surgeon to the 10th foot regiment,) has never known it fail. A drachm may be given mixed with a little water, and repeated in about three hours—from one to five doses may be necessary. A spirituous tincture is more convenient, ℥iv. of the powder to Oj. of alcohol, and filtered. Only about ℥vi. will be obtained in this way. The dose necessary will be from ʒj. to ʒiij.—℥ij being in most cases sufficient. (Dr. C. A. Gordon, p. 367.)

ULCER OF THE STOMACH.—In many cases of hæmatemesis, if there be no great tendency to vomiting, turpentine, or the sesquichloride of iron act admirably; but what is preferable, because it is not so apt to excite vomiting, is ten grains of gallic acid, dissolved in an ounce of distilled water by the aid of about ten minims of the dilute sulphuric acid. Among tonics, the preparations of iron claim the foremost rank. When vomiting and pain have ceased, begin with the very mildest preparations, such as the ammonio-citrate, which should always be given immediately after food. The insoluble oxide should generally be avoided. As a combination of the vegetable and mineral tonics, none is so elegant and so generally useful as a mixture of sulphate of quina and iron, kept in solution by a few drops of sulphuric or hydrochloric acid. (Dr. W. Brinton, p. 57.)

AFFECTIONS OF THE URINARY ORGANS.

Diabetes.—Dietetic treatment is superior to every other. Bread made of finely-ground bran, mixed with butter, eggs, and milk, and leavened by hydrochloric acid and carbonate of soda is both very palatable and valuable. (Dr. A. B. Garrod, p. 422.)

Bran cake is by far the best substitute for bread. For mode of preparation, see p. 425. (Mr. J. M. Camplin.)

Hydrocele.—Pass about a grain of the red oxide of mercury into the sac, by means of a probe, through the canula which has drawn off the fluid. It will produce inflammation and effect a cure in every instance. (Mr. E. A. Lloyd, p. 175.)

Impermeable Urethra.—In cases of complete obstruction from wounds, &c., introduce an instrument like the common lithotomy staff, but grooved on the concave side, through the fistulous opening of the perinæum into the bladder, then pass the guide director employed for the division of strictures by external incision, down to the seat of obstruction, and thrust it through the opposing structures (in the course which it ought to take were the canal free) forward into the bladder; the obstruction may then be divided in the same way as in the usual operation for stricture. It must be remembered that this is not the remedy for stricture, but for obliteration of the canal. (Prof. Syme, p. 160.)

Lithotomy.—Mr. Liston's essentials in operating. were: free external wound, sparing use of the knife in making way to the groove of the staff, (the forefinger of the left hand *dilating* much), and limitation of the prostatic wound to the anterior three-fourths of the gland, so as to leave intact what he called the "reflexion of the ileo-vesical fascia;" and it was this that he mainly insisted on in his teaching. If he had been interrogated as to the manner of holding the knife, his answer would have been to this effect: "It is of little consequence, provided you do it firmly; guide its point carefully on the forefinger of your left hand; mind the base of the prostate, and don't cut the reflexion of the ileo-vesical fascia." (Prof. Miller, p. 148.)

Rectangular Catheter-Staff.—Mr. Hutchinson recommends the use of an instrument combining the advantages of both a grooved staff and a catheter. It is rectangular in form, and the groove commences only from the angle, being broader at that point to allow of its being more readily found, and the angle being very prominent in the perinæum is more readily reached by the knife. There are also other important advantages: from the straight direction which the knife runs it does not readily leave the groove—from the groove only commencing at the angle, the urethra cannot be opened too far forward, or the artery of the bulb wounded. From its being a catheter as well as a staff, the surgeon may be quite certain it is in the bladder before commencing the operation, and the bladder can be injected without any change of instruments. There is no difficulty whatever in its introduction. (Mr. J. Hutchinson, p. 153.)

One of the great advantages of this over the curved form of staff is, that the rectum is quite secure from being wounded if the finger be kept in the rectum whilst making the incisions. (Dr. Buchanan, p. 165.)

LITHOTRITY.—It is a rule with Sir B. Brodie never to break the stone more than once at the first sitting, so that the bladder may become accustomed to the altered state of the stone. (Mr. F. C. Skey, p. 156.)

PERINEAL FISTULA.—If it does not depend upon stricture, touch the edges of the opening with a solid stick of nitrate of silver every second day; in the course of a few weeks, if the patient be otherwise in good health, it will gradually heal without any other means whatever. (Mr. W. Colles, p. 174.)

SUGAR IN THE URINE, *Tests for.*—Moore's test, or that by boiling the urine, to which an equal bulk of liquor potassæ has previously been added, may be much increased in delicacy by first adding a drop or two of the potash solution to ensure slight alkalinity, and then some good bone black or animal charcoal. This mixture must now be filtered, and we thus obtain a liquid perfectly colourless, and on adding a further excess of liq. potassæ, and boiling, the yellow or orange colour is much more readily observed than in the urine before preparation. Should no change of colour take place, we may safely conclude that no sugar exists, or at any rate such traces as may safely be disregarded. (Dr. A. B. Garrod, p. 422.)

Dissolve one drachm of bichromate of potash in two drachms of concentrated sulphuric acid, and the same quantity of water. When an equal bulk of this fluid is added to glucose urine, the reddish-yellow colour changes into a beautiful bluish-green colour, and carbonic acid escapes. A dirty brownish-red colour results if no sugar be present. (Prof. Krause, p. 71.)

STRICTURE OF THE URETHRA.—It is well known that when strictures of the urethra are relieved of the irritation of the urine passing over them, that they spontaneously soften down and dilate; on this account, it is a favourite operation with some of the London surgeons to give the urethra "a holiday," by opening the canal behind the stricture and just in front of the prostate, without dividing the stricture; a female catheter should then be passed and retained for a few days, when the stricture will be found readily dilatable. (Mr. Cock, Mr. Wormald, and Mr. Simon, p. 166.)

Perineal Section.—For the description of a modification of Syme's staff for the perineal section, see page 164. After the division of the stricture, the gum elastic catheter is passed over the central staff forward into the bladder. This catheter, which must be allowed to remain, has a lateral as well as a terminal aperture, so that the urine may flow freely; it is also furnished with a soft metal stilette, which gives it the necessary stability and at the same time acts as a plug. (Mr. J. Marshall, p. 164.)

AFFECTIONS OF THE SKIN, &c.

Boils and Carbuncles.—As these depend on a constitutional cause, constitutional treatment must be combined with the local. The application of concentrated tincture of iodine rarely fails to abort an incipient boil. Nitrate of silver and sesquichloride of iron have been used for the same purpose. If gangrenous, apply strong nitric acid to the sloughing margin. If there be a large amount of sloughing, but not unless, make a free crucial incision. Water dressing is the simplest and most soothing application, and the most scrupulous cleanliness must be observed. (Dr. T. Laycock, p. 197.)

[The best way of treating all these boils and carbuncles is to pinch up a little of the skin when the carbuncle is just commencing, and to carry a sharp-pointed bistoury, with the cutting edge upwards, through the base of the little hard substance, and so divide it completely. This is almost a never failing mode of arresting carbuncle, *if done early enough.*—Editor.]

Chilblains and Chaps.—Protect the parts from the air by an application composed of 30 parts of collodion, 12 parts of Venice turpentine, and 6 parts of castor oil. (p. 227.)

Erysipelas.—Apply locally muslin saturated with a strong tincture of lobelia: it will be found more useful than any other application. (Dr. Livezey, p. 227.)

Dr. Delarue strongly recommends the following application in erysipelas, which he believes exerts even a specific effect upon the disease:—Creosote, 8 parts; lard, 30 parts. To be applied every two hours. (p. 227.)

Favus.—Apply a large bread poultice over the entire scalp to get off the adherent scabs; after the removal of these, rub soft soap into the part and wash it off thoroughly; then apply an ointment composed of equal parts of the ung. hyd. ammon. chlor. and ung. picis liq.: this must also be well rubbed in and allowed to remain until the next ablution, which must be repeated twice a day. (Dr. Fuller, p. 210.)

Inverted Toe-Nail.—The deflected portion must be allowed to grow as long as the rest of the nail, then a groove must be cut from the root to the end, along the line where it begins to deflect, great care being taken not to go so deep as to reach the quick beneath. The depressed portion must be raised by insinuating, in the gentlest manner possible, a small compress of muslin between the edge of the nail and the flesh below; this must be removed from day to day, and passed further towards the root of the nail, until it is grown out to its full length, when the cure will be complete. (Dr. Batchelder, p. 227.)

Itch.—Instead of the sulphur ointment, simply a lotion of caustic potass, 1 part; distilled water, 12 parts. (M. Fischer, p. 211.)

After the trial and comparison of the various modes of treatment, M. Bourgignon accords the preference to the following formula:—Glycerine, 50 drachms; finely-powdered sulphur, 25 drachms; 2 yolks of eggs; and tragacanth powder, q.s.; adding essences to mask the smell.—*(Med. Times and Gazette, Jan.* 17, 1857, *p.* 72.*)*

Roseola, *Diagnosis of.*—The exanthem of roseola æstiva may be diagnosed from the rash of measles, which it closely resembles, by the absence of a crescentic form or arrangement of the spots; the irregular shape of the patches; by their more rosy and generally paler hue; by their commencing on the most prominent parts of the face instead of, as in measles, about the edge of the hairy scalp. There is no coryza. Small-pox is sometimes preceded by a rose-coloured rash at the flexures of the joints, diagnosed by the general symptoms, viz., pain in the head, vomiting, &c. From scarlet fever, which it often much resembles, by its punctiform character, its colour, and the extent of surface involved. Typhoid fever is accompanied by an exanthem, distinguished by the wide separation of its constituent spots. A similar rash may accompany vaccinia, gout, rheumatism, typhus fever, and cholera. The dusky roseola of secondary syphilis is liable to be mistaken for it, and in some cases can only be diagnosed by the general symptoms. (Dr. W. Jenner, p. 204.)

Sebaceous Tumours.—Pass through the centre of the tumour a needle carrying a thread, and tie the same as a seton; the tumour will inflame, pus will form and be evacuated through the apertures. The thread may be removed in a fortnight. This treatment is only applicable to those tumours which are more or less in a fluid state. The size of the thread must depend upon the size of the tumour. (M. Marchand, p. 228.)

Small-Pox, *Prevention of Pitting in.*—If the eruption be distinct, the solid stick of nitrate of silver should be applied on each pustule, previously moistened with a little water. If confluent, the concentrated solution of 8 scruples to an ounce of distilled water, must be applied over the whole surface. (If necessary to apply it to the scalp, the hair should be previously removed.) The application should be used on the second or third day of the eruption. Mr.

Higginbottom relates a case of confluent small-pox, where no punctures were made, in which the strong solution was applied to the whole of the face and ears. the pustules were immediately arrested, and in nine days the eschar had come away from the face without leaving pits. (Mr. Higginbottom, p. 212.)

Apply a solution of the nitrate of silver, of the strength of one drachm to an ounce of water, all over the face, for ten days or a fortnight, commencing a few days after the eruption makes its appearance. If there be intense inflammatory action about the head, it may be applied over the scalp, and also to the mouth and fauces. (Dr. A. Roward, p. 211.)

Touch the apex of each pustule, by means of a camel's hair brush, with any vesicating fluid, if confluent the whole surface affected should be so vesicated. The best time for doing this, is between the fourth and eighth days, but it may be done any time before the slough has formed. The blisters should afterwards be punctured with a needle, and the part sponged with a lotion containing borax, ammon. carb., acid hydrocyanici, glycerine and water. (Mr. J. Startin, p. 213.)

Ulcers of the Leg.—If the ulcers are *gangrenous*, they may readily be made healthy by applying a powder made of equal parts of fine charcoal and chalk, and over this a poultice, or dry lint and bandage. If *very painful and irritable*, apply a dossil of lint dipped in chloric æther, and over this the bandage. If sanious, or fungoid, apply freely the nitrate of silver, or sulphate of copper. If sluggish, they must be roused into action, by applying the nitric oxide of mercury ointment. If the edges are hard and cartilaginous, draw the edges tightly together by straps of plaster, and apply a flannel bandage as tightly as possible. to awaken the absorbents into activity. For simple sores, the simple ointment is best with a bandage as tightly applied as it can be borne. If much matter is discharged, they should be dressed daily, and in all troublesome cases, a flannel bandage is absolutely indispensable; it will be found to be very much superior to the usual calico bandage, if properly applied. (Mr. T. Hunt, p. 222.)

AFFECTIONS OF BONES AND JOINTS.

American Splint.—A modification of Dessault's long splint for fractures of the femur, is made by fitting the upper extremity exactly like a crutch under the axilla. It should extend to five or six inches below the external malleolus. A shorter splint may be fitted on the inner side, to extend from the perinæum to a similar distance below the ankle as the outer splint. The advantages of this, are, that extension is made from the entire leg, instead of the instep, and the axilla becoming a second fulcrum, relieves the perinæum very much. (Mr. P. B. Mansfield, p. 87.)

ELBOW-JOINT, *Resection of.*—The last improvement in this operation is that of Langenbeck's, who makes only one long incision on the inner edge of the ulna. The ends of the bones may be readily turned into the wound and sawn away with a key-hole saw, cutting from before backwards. In certain cases, where there is great swelling and the ligaments are sound, this plan will be more difficult, and a cross incision will be necessary. (Mr. Paget, Mr. Fergusson, Mr. Erichsen, p. 79.)

HIP-JOINT, *Excision of.*—Great advantage will be obtained by the use of Mr. Butcher's saw: the blade is pressed behind the bone, and then being turned in a horizontal direction by a screw, the head and trochanters are readily removed. (Prof. Erichsen, p. 81.)

HUMERUS, *Dislocation of.*—In cases difficult of reduction, the following mode is worth having recourse to. Bandage a rectangular splint to the arm and forearm, so as to make the latter into a lever, by which to act upon the former. The operator's knee must be put under the patient's elbow as a fulcrum, the forearm must be depressed, and the bone lifted into its place. (Mr. T. Wormald, p. 88.)

INCISIONS INTO JOINTS.—These may be made with advantage; 1st. In cases of chronic inflammation, with effusion and pain, if these have resisted ordinary remedies and health is declining; 2nd. In cases of acute or subacute synovitis, when the symptoms are unusually severe, and the external coverings shew a tendency to ulceration, or when there is reason to believe that there is pus within the joint; 3rd. When the joint is occupied by bony or cartilaginous debris, which cannot find exit; and 4th. In cases of carious disease of the bones. (Mr. Gay, p. 82.)

These can only be beneficial when, from the long duration of the disease, the actual structure of the joints have become so changed as to diminish the danger of opening into their cavity. When the disease is recent and progressing, opening the joint is attended with an aggravation of the symptoms. (Mr. Hancock, p. 85.)

KNEE-JOINT, *Amputation at the.*—This amputation has lately been performed by Mr. Fergusson several times, and he believes that of all the thigh amputations it is really the best, as such a good flap and stump are obtained. (See Mr. Fergusson's plan at p. 79.)

Excision of.—An error in diagnosis as to the suitableness of a case for excision by no means debars the patient from the likelihood of cure by amputation. If the patient be under the influence of chloroform the shock is not greater, and if the bones are found extensively diseased, amputation should be performed at once. (Mr. R. G. H. Butcher, p. 74.)

Spinal Curvature.—Give one ounce of fine filings of fresh bones daily, either in milk or, better still in rice milk, which entirely disguises all disagreeable taste. At the same time the patient must be freely exposed to fresh air and sunlight. (M. Piorry, p. 88.)

Tenotomy.—In severe cases the operation must be divided into two stages, the second operation being performed after a few months. The inversion of the anterior portion of the foot must be overcome, and the case converted into equinus before dividing the tendo-Achillis. At the first operation the tendons of the tibialis anticus, tibialis posticus, and flexor longus digitorum may be divided. If the tendo-Achillis be also divided, too many objects are to be attained, and there is imperfect eversion; it is, therefore, now an established rule that the tendo-Achillis should be the last divided. The plantar fascia may be divided at either sitting, but if much contracted, it should be done at a separate stage in the treatment. In performing the operation, introduce the knife obliquely behind the tendon and close to it, with the flat surface parallel with the tendon, then depress the handle and cut from within outwards, as cleanly and neatly as possible, so as not to disturb the surrounding parts, then cover the wound with a compress of lint and a little plaster, this will exclude the atmosphere and prevent extravasation and inflammation. The foot may then be allowed to return to its deformed position. With respect to the kind of knife used, the best is the strong spear-pointed tenotome, with a cutting edge slightly curved. (Mr. W. Adams, p. 89.)

Ununited Fracture.—After removing the ends of the bones, the most perfect rest must be maintained, and this can only be effected by placing the *whole* limb under restraint. A hard firm case may be formed by covering the limb with pasteboard and starched bandages, by which means the slightest movement will effectually be prevented. (Prof. Syme, p. 440.)

Bubo.—Instead of opening these by the knife, which is the plan ordinarily employed, use caustic potass. The slough soon separates, and the result is much more satisfactory to the surgeon, as you avoid the constant opening and reopening, causing drain to the system and disgust to the patient. (Mr. J. Turner, p. 252.)

Condyloma.—First remove the exciting cause, and enjoin strict cleanliness, afterwards apply a strong solution of the sulphate of copper, or the solid sulphate. This also forms an excellent gargle for the affection of the throat. When syphilis is present, a mild mercurial course may be necessary for other symptoms. (Dr. J. D. Gillespie, p. 214.)

Gonorrhœa.—Rectified turpentine and the seeds of *Heracleum sphondylium* are as useful as the expensive and adulterated copaiba and cubebs. (Prof. Sigmund, p. 253.)

MERCURIAL FŒTOR and SALIVATION.—The best remedy for instantaneously and safely removing the fœtor of the breath is a strong solution of the chloride of zinc, made by mixing one drachm of Burnett's solution with seven drachms of distilled water. This must be applied by the medical attendant with a soft brush to the gums, and between the teeth, the mouth being frequently washed with water. The solution acts by immediately entering into combination with the rotting epithelium and forming an inodorous product, which the brush removes, at the same time it powerfully constringes the enlarged vessels, and tends to restore a healthy state of the local circulation. (Mr. T. W. Nunn, p. 257.)

MERCURIAL FUMIGATION.—The efficacy of calomel fumes is much enhanced when combined with the vapour of hot water. For this purpose, two separate processes have been had recourse to, one to volatilize the calomel, and the other to give off steam; but by a very ingenious lamp, made by Mr. Blaise, both these processes are combined into one. Mr. Pollock, who has used it at St. George's Hospital, finds that it is very useful in private practice for volatilizing sulphur, iodine, &c. (For description of lamp, see page 254.)

PRIMARY SYPHILIS, *Ferruginous Treatment of.*—Mr. Behrend, of Liverpool, instead of the old mercurial treatment, uses the potassio-tartrate of iron, to cure every type of primary sore: of course, this does not exclude the use of caustics. He prescribes the salt in form of solution, in the proportion of one part to six of water, of which two table-spoonfuls are to be taken three times a day, and a solution of the same strength as a local application to the part. The patient must be instructed, lest he remove the lint roughly, and so destroy an incipient cicatrice or healthy granulations. In the phagedænic form, generous diet, wine and fruit, may be allowed, but no pastry or cheese. He has not had a single case of secondary or constitutional syphilis after treatment with the potassio-tartrate of iron alone, either in hospital or private practice: except in two cases, in which he combined the iron with mercurial treatment. (Mr. H. Behrend, p. 230.)

SECONDARY SYPHILIS.—Of the different forms of eruptions, we may mention, first, among the *rashes*, the annular form of the roseola: this very soon yields to the iodide of potassium, if it be given before desquamation has taken place, and the copper-coloured stain has formed. Purpura must be treated by generous diet, iodide of potassium, and decoction of bark. Of *papular* eruptions, syphilitic lichen may be very obstinate, but it will always yield to a strong lotion of the bichloride of mercury, ten grains to the ounce. In the ulcerating form of lichen, the iodide of mercury, one grain every night, with two or three grains of the extract of conium, in the form of a pill, is the best treatment. Syphilitic prurigo yields more readily to sarsaparilla than to any other remedy. In the *scaly* forms, such as lepra and psoriasis, Donovan's solution, in doses of ten minims to half a drachm, three times day, is the most efficacious internal remedy. The best local remedies are, the bichloride of mercury lotion, and in some cases, the mercurial vapour bath, by surrounding the patient, seated on a cane-bottomed chair, with blankets, and applying a spirit-lamp to the mercurial preparation; but the simplest plan is to heat half a brick in the fire, put it in a chamber-pot beneath the chair, and throw the mercurial preparation upon it. If you use the bisulphuret of mercury, one or two drachms will be necessary; if the iodide, ten grains or a scruple; but perhaps a combination of the two is better, say ten grains of the iodide with a drachm of the bisulphuret, increasing the dose to double this quantity. At the Lock Hospital, ten grains of calomel is preferred. The patient should be kept exposed to the vapour for ten or fifteen minutes; and when the blankets are removed, he should be rubbed dry, and a wet sheet wrung out of cold water thrown over him, to diminish the sensitiveness of the skin and the relaxing effects of the vapour bath. The only *vesicular* form of disease is rupia: here mercury is most dangerous, whilst the iodide of potassium internally, with the red precipitate ointment locally, is almost sure to cure. Among *pustular* diseases, we may mention ecthyma: this, again, is aggravated by mercury, but sarsaparilla often cures it. The *tubercular* eruptions are always obstinate, but the mercurial vapour bath is the best treatment. Cutaneous excrescenses may be easily destroyed by strong acetic acid or the tinc. ferri mur.; but Ricord's plan of using a chloride of soda lotion for a few days, and then sprinkling the growths with calomel, is the best treatment. With respect to the syphilitic diseases of bones, it is in the hard periosteal node that the iodide of potassium, in eight grain doses, three times a day, is the specific remedy. The soft or gummy node gradually yields to repeated blistering. In chronic syphilitic diseases of the joints, the iodide of mercury is more generally useful than the iodide of potassium: these cases are very obstinate, and it may be well to alternate the remedies, at the same time giving good diet. In syphilitic angina, if not very severe, mercurial fumigation may be used, or the vapour of the grey oxide may be inhaled; but in very severe cases, the iodide of potassium internally, with the red precipitate ointment externally, acts like a charm. In the treatment of *syphilitic iritis*, commence at once with calomel and opium, say one grain of calomel with a sixth of a grain of opium every three hours, until the gums are slightly touched, but do not carry it to salivation. (Mr. T. Spencer Wells, p. 235.)

Remember that secondary symptoms may be produced in the female by the seminal fluid of a man who may have had syphilis previously, and who may seem to have been perfectly cured. Thus the woman may be affected either primarily, or by a fœtus, or by the semen: were we not aware of the last mode of communication, we should sometimes be quite puzzled to account for the symptoms. (Dr. W. H. Porter, p. 272.)

Syphilization.—The employment of this as a therapeutical agent is not fraught with danger, and the investigation of the subject opens up a new field for further study. (Dr. W. Boeck, p. 259.)

Venereal Warts.—Instead of using the stronger caustics and escharotics, or removing them by operation, all of which cause exquisite pain, and often do not succeed, apply a solution of chromic acid in distilled water, in the proportion of 100 grains of the crystallized salt to the fluid ounce of water. It is best applied by aid of a pointed glass rod, or where a larger quantity is needed, by means of a small glass tube drawn to a point. Only so much should be applied as will saturate the diseased growth, avoiding the surrounding healthy parts. If the warts are very extensive, only a part may be treated at once, and repeated applications are necessary. But little pain is caused by this application, and the warts waste and disappear. The best immediate dressing is dry lint, and after the first twenty-four hours, free ablution of the parts and a dressing of dry lint twice daily should be enjoined; or to check any inflammation, the parts may be washed with a solution of lead, and the lint moistened in the same. (Mr. J. Marshall, p. 219.)

AFFECTIONS OF THE EYE AND EAR.

Artificial Tympanum.—The introduction of cotton wool into the ear frequently fails to give relief, owing to its not being properly applied. Mr. Yearsley recommends a piece of cotton to be attached to a thread and drawn through a silver tube, about two inches long, so as to bring the cotton against the extremity; then wet the cotton, introduce it, and move about at the bottom of the passage until it reaches the spot at which the hearing is improved; the thread may then be let go, and the tube withdrawn. (Mr. J. Yearsley, p. 191.)

Belladonna. *Uses of.*—In intolerance of light, a lotion made of half a drachm of the extract dissolved in eight ounces of water, and applied warm, will relieve a large proportion of cases. To dilate the pupil, for the purpose of exploring the interior of the eye, a drop of the solution of the sulphate of atropia, applied to the conjunctiva, will produce the effect in about ten minutes. At the commencement of scrofulous ophthalmia, one or two grains of the powdered leaves with two or three of the hydrarg. c. cretâ have generally a good effect. The tincture of belladonna, when given in ten-drop doses to adults, relieves neuralgic pains about the eye, and even the pain attendant on internal ophthalmia, in the most astonishing manner. (Mr. T. Wharton Jones, p. 176.)

Cataract, *Extraction of.*—In performing extraction, in cases of adherent pupil, the adhesions are to the capsule and not to the lens itself; and the former having been well lacerated, the latter is found to be as loose as in the healthy eye. A second needle operation, for getting rid of the capsule after the section has well healed, is of course generally necessary, as indeed is very often the case after ordinary extraction. In rare cases, when the whole margin of the pupil is firmly united, and too rigid to allow of the escape of the lens through it, the scissors may be used, to liberate and enlarge the pupillary margin. (Mr. Critchett, p. 183.)

It is of great moment to obtain early union of the wound, and for this end, the *upper section* ought to be made in the left eye as well as in the right. The even and gentle support of the upper lid ensures accurate apposition. The weight of the aqueous humour is principally sustained by the lower and unmutilated half of the anterior chamber; and the aqueous humour, tears, and other discharges, are carried away from the wound, which is not therefore disturbed by their confluence between its edges. (Mr. J. Vose Solomon, p. 409.)

Ophthalmoscope.—The best form is a small circular concave mirror, of about 10 inches focus, having a hole bored in its centre, and mounted in a piece of tortoiseshell. To use it, the patient should be seated by a table in a darkened room, with a lamp stationed near his ear. The observer must now seat himself before the patient, and so place the mirror, that the light is thrown into the patient's eye, and at the same time look through the small central hole. A small slightly convex lens, placed before the patient's eye, will often much facilitate observation. The light used should not be too strong, or injurious effects may be produced on the retina, and it should not be continued long. For ordinary examination, a concave mirror is to be preferred, but when a feeble light only can be borne, or we wish to direct our attention to the changes in the vitreous body, or anterior part of the lens, then the plane mirror will be found best suited to the purpose. As a rule atropine should be used as little as possible. (Mr. J. Hogg, p. 188.)

Polypus of the External Meatus.—The treatment of polypi by astringent applications, has no benificial effect; the same remark applies to the use of the nitrate of silver, whether solid or in solution. The potassa cum calce answers the best of any thing, and if made to contain a small quantity of iron, it is firmer, much less deliquescent, and may be more readily applied than the usual form. The first step in the proceeding is, to syringe out the meatus with tepid water, and to dry it with cotton wool; then place the patient in a strong light, pass a glass tube down to the polypus to protect the meatus, and press the end gently against the polypus, so that it may fully occupy the distal part of the tube, the potassa cum calce must then be introduced and kept in contact with the polypus for half a minute, this will scarcely give any pain, but if it should happen to touch the surface of the meatus, the pain will be very acute, the tube must therefore be allowed to remain for a few minutes, the meatus must then be syringed out, to wash away the little oozing of blood, &c. On inspecting the polypus, it will be seen to present a pulpy, uneven mass of a dark livid colour. As a general rule, the potass may be applied daily in the same manner until the whole of the mass is destroyed. (Mr. J. Toynbee, p. 193.)

Purulent Ophthalmia.—The following lotion is almost specific in various forms of purulent ophthalmia and chronic conjunctivitis. ℞. Cupri sulphatis gr. ij.; vini opii ʒj.; aquæ dest. ʒvij. Fiat lotio. It is applied freely with a soft camel's hair brush, three times a day. (Mr. T. Wharton Jones, p. 186.)

MIDWIFERY, ETC.

Kreuznach Waters.—There is no reason to believe that these waters whether employed on the spot, or elsewhere, have any power in removing undoubted fibrous tumours of the womb, although we may speak with the greatest confidence of their efficacy in diminishing general hypertrophies of the uterus, not having an isolated form, or independent growth. (Dr. H. Thompson, p. 433.)

Morphia Suppositories.—After operations on the vagina, rectum, uterus, or perineum of women, and especially on the male genito-urinary organs, instead of using the soap and opium, in common pill use, as a suppository, Dr. Simpson's morphia suppositories will be found to act much more efficiently; the following is the formula for half-grain suppositories; acetate of morphia, 6 grains; sugar of milk, 1 drachm; simple cerate, half a drachm; and divide the mass into twelve suppositories, which must be coated with a layer of harder wax. It may be easily introduced by the finger. (Prof. Simpson, p. 355.)

Ovarian Cysts, *Injection of.*—Tap the cyst through one of the linea semilunares, the patient being laid in bed on her left side, then inject six ounces of tincture of iodine, three times stronger than the tincture of the London Pharmacopœia, and undiluted with water. When reaction sets in, give wine freely, as great prostration is often the result of it. (Mr. I. B. Brown, p. 340.)

When the cyst is large, to empty it at once excites disturbance of the system, and presents too large a surface for the efficient action of the iodine; it is, therefore, better to draw off half the contents, and a week after to remove two-thirds of what remains, then some days later, completely to empty the cyst, and throw the iodine into the diminished cavity. (M. Demarquay, Med. Times and Gazette, Feb. 28, 1857, p. 223.)

PREGNANCY, *Duration of.*—To ascertain the most probable day of a woman's confinement, add 278 days to the last day of the last menstruation. (Dr. J. M. Duncan, p. 286.)

PREMATURE LABOUR, *Induction of.*—Labour is certainly and speedily brought on by injecting a stream of hot or cold water against, or still better within the os uteri, at intervals of three or four hours, for the space of ten minutes or a quarter of an hour at each time. The great advantages of this method are, that there is no risk of injury to the os uteri, and the membranes remain unruptured, so that the labour bears a closer resemblance to natural labour than if induced by any other means, and it also promises far greater safety to the child where this is an object. In the early months, while the cervix uteri is as yet undeveloped, and the ovum is contained in the cavity of the fundus uteri, the douche cannot be relied upon, and the better plan will be to introduce the uterine sound and turn it round once or twice; this will never fail to produce expulsion. When the life of the child is no object, as before the seventh month, the stilette may be used, but before the fifth month this is a dangerous instrument. (Dr. Tyler Smith, p. 285.)

PROLAPSUS UTERI.—In old extreme cases Brown's operation will give the greatest relief. The patient must be placed in the lithotomy position, a strip of skin and mucous membrane must then be dissected from the labia and the posterior part of the vagina, and the raw surfaces brought together by the quilled suture, a few ordinary sutures being applied to the margins. (Prof. Fergusson, p. 321.)

PUERPERAL CONVULSIONS.—In fulness of the vascular system, where the disease depends on over stimulation of the spinal marrow, or on the mechanical pressure exerted on that organ by the blood, together with the counter-pressure of the distended brain on the medulla oblongata, venesection is the great remedy; it removes the pressure, and also preserves the brain from injury during the convulsion; besides, by relieving the convulsions, it prevents the fulness of the vessels of the head and spine, which takes place from muscular pressure. When the convulsion depends upon irritation of the uterus, the rectum, or the stomach, bleeding alone cannot be relied upon. The propriety and extent of venesection must be estimated by the state of the circulation in the interval of the fits, and not by the violence of the disease; for when the circulation is reduced below par, loss of blood becomes an actual excitant to the spinal system. Nauseating doses of emetic tartar act in the same way as bleeding. Opium given in a full state of the circulation before bleeding is a dangerous remedy; while, if given in an anæmic subject, it is of great service. It is generally dangerous in its effects when given at the commencement of convulsions, but is valuable in the advanced stages. In the one state of the circulation opium acts as a stimulant, in the other as a sedative. A copious enema of warm water, with castor-oil or turpentine, is far better to procure a free evacuation of the bowels than drastic cathartics, which may only add to the mischief. When convulsions depend upon irritation in the parturient canal, puncturing the membranes will take off a considerable amount of distension from the uterus, and render the organ less irritating to the spinal system. With respect to artificial delivery no arbitrary rule can be laid down, but we may say, that whenever it can be effected with less irritation than what is produced by the continuance of the natural process, it is advisable that it should be performed. (Dr. Tyler Smith, p. 303.)

Puerperal Fever.—Dr. Tyler Smith places great confidence in the chlorate of potash as a prophylactic against this fatal disease. It appears to act by liberating in the economy the oxygen and chlorine it contains. It should be given in doses of from five to ten grains three times a-day. The hands should be washed, and if necessary, in a solution of chloride of lime after touching any wound, purulent surface, or pathological specimen; for, as Dr. Simpson remarks, the fingers may sometimes be compared to the armed points used in vaccination. Under suspicious circumstances, the hands should even be washed before and after every vaginal examination. The nails of the practitioner should be kept closely cut, and some have even recommended that gloves should not be worn at all, as they have been known to become infected, and so keep up the mischief in spite of all precautions. The mucous surfaces are in the most favourable state conceivable for inoculation, and the surface of the os uteri is almost universally partly denuded of epithelium during labour. Students should not be allowed to attend labours except at certain seasons set apart for the purpose, during which time they must neither dissect, nor attend the wards of the hospital or the deadhouse. (Dr. Tyler Smith, p. 296.)

Sore Nipples.—Thirty parts of collodion, mixed with half a part of castor-oil, and one and a half parts of turpentine is rendered elastic. This is to be painted over the nipple, and over this a piece of gold beater's skin is to be placed, pricked with holes for the passage of the milk. By moistening the gold beater's skin, it becomes soft and supple. (M. Legroux, p. 355.)

STERILITY *from Dysmenorrhœa, &c.*—When the cervix uteri is very much contracted, introduce through the speculum a long stilette into the uterus, then over this pass the smallest sized elastic tube, and allow it to remain for a short time. Gradually pass on from this to larger tubes, until Simpson's dilators can be introduced. The best time for introducing the instrument is immediately after the cessation of the catamenia. Diseases of the rectum will also produce sterility. The rectum and uterus are both supplied by vessels and nerves from the same source, and therefore disease in the one organ must interfere with the other. When a female is suffering from bleeding hemorrhoids, during the menstrual period a diminished supply of blood is sent to the uterus, and its mucous membrane will not undergo those normal changes necessary for the reception of the impregnated ovum. The same observations apply to prolapsus ani with loss of blood at every defecation: when this is the cause, apply two or three ligatures to the prolapsed mucous membrane, and return them within the sphincter. Give opiates to keep the bowels quiet, and give good diet. After the usual operation for fissure of the rectum, you must give opium regularly and freely to relieve pain and secure perfect rest for the bowel. After a week or ten days they may be moved by injections. (Mr. I. B. Brown, p. 348.)

TURNING.—*Chloroform.*—Delivery may be accomplished by the use of this drug in cases where it would have been impossible to have turned without its use. It is preferable to any other means, unless indeed bleeding should be required by any other constitutional condition of the patient. It relaxes contraction of the os uteri, the ostium vagina, and the body of the uterus, and in addition gives immunity from pain. (Dr. Tyler Smith, p. 290.)

UTERINE FIBROID TUMOUR, *Enucleation of.*—In making the opening through the uterine wall, the French and American surgeons prefer the use of the knife. In a case of Dr. Simpson's, caustic potash was applied an inch behind the os uteri. Our own opinion is decidedly in favour of the knife, and to make the opening through the uterine structures from within the uterine cavity, rather than from the vagina. Then comes the question, ought we to enucleate at once by instruments, or wait for the expulsive action of the uterus? Before we can answer this, we ought to be able to say whether the organ is, in such cases, always in a condition to exert it. Is it hypertrophied? This is by no means invariable. Hence how hopeless it would be in certain cases to wait for any expulsive uterine action, for the uterus may be actually atrophied, although this is very rare. We may generally expect hypertrophy if the fibroid growths project into the cavity of the uterus and irritate the mucous membrane; or if the tumour be vascular; also if it be developed during or shortly after the period of conceptivity. On the other hand, we should expect atrophy if the tumour occurred during the period of decrepitude. If the uterus be hypertrophied, will it always exert its expulsive action? In all the cases recorded it has not failed to occur, so that after making an artificial os, the cellular attachments of the tumour must be separated and expulsion waited for. If the pains do not come on, the operation of separation must be repeated, the uterus will be sure in time to expel the exposed and partially separated tumour. Ought the tumour to be enucleated at once, or the uterus be allowed to expel it, either partially or entirely? In favour of the latter method we may say that it bears a more close relation to the natural process of effecting the same object; there is less risk of hemorrhage, and lastly, the cavity left is much smaller, and the uterus is more likely to contract on it. In the removal of these tumours, we should recommend, 1. That the incision through the uterine walls be made sufficiently large. 2. That the separation of the cellular attachments be as extensive as possible. 3. That the cyst of the tumour be not cut into. 4. That ergot be given. 5. That the hand be introduced as soon as the dilatation of the os will admit to remove the tumour.—(Mr. T. F. Grimsdale, p. 322.)

UTERINE POLYPI.—These, when pendant from within the os uteri by a narrow peduncle, may be readily removed without any hemorrhage by the écraseur. Slip the loop of the chain around it, and by tightening slowly and steadily, the stem will easily be cut through. (Dr. P. Shannon, p. 351.)

UTERUS, *Cancer of.*—Hemorrhage is an almost constant symptom of commencing cancer of the os uteri, quite as valuable as hæmoptysis is in respect to tubercle in the lungs. It is peculiarly valuable when the subject of the affection has previously ceased to menstruate. (Dr. West, p. 352.)

VESICO-VAGINAL FISTULA.—The best time at which to perform any operation for its cure is within three months, for after this time the edges take on an unhealthy action and become indurated, so that they do not readily adhere; the bladder also loses its capacity for dilatation if not early remedied. To obtain a raw surface, Mr. Baker Brown pares away the mucous membrane from the margin of the fistula, and also from the surface of the vagina. Dr. Pancoast's plan is to split the posterior border of the fistula to the extent of half an inch, and to pare the anterior into a wedge-shaped tongue, which is inserted into the groove made by splitting the posterior border. A modification of these, which we recommend, is to split the entire margin of the fistula all round to the extent of three or four lines, to open the flaps out, and bring them together by the quilled suture. The needle, armed with a double ligature, is first passed deep through the anterior flap, then through the posterior flap, and withdrawn, leaving the ligature to which the quill or bougie must be attached. The points to be noticed in this operation are, 1. To split the flaps into healthy areolar tissue. 2. To pass the ligatures sufficiently deep. 3. Not to tie the ligatures too tight. 4. To get rid of the urine as soon as secreted, by keeping Sims' S-shaped catheter always in the bladder. (Dr. M. H. Collis, p. 316.)

Support the patient as if on her hands and knees. Expose the vagina by Dr. Sims's retractor, make a curved cut through the mucous membrane of the vagina one third of an inch behind the posterior border of the opening into the bladder; the mucous membrane behind this cut must be raised, so as to form a flap half an inch deep; the ends of this cut are connected by another similar one, about one-third of an inch in front of the opening into the bladder, and a similar narrow flap raised by dissecting the mucous membrane forwards. The mucous membrane circumscribed by these two cuts should then be removed, by which the opening into the bladder will be enlarged, and surrounded by the reflected flaps of the mucous membrane of the vagina. The apparatus for union is that recommended by Dr. Marion Sims, which consists of two bars, with shot clamped on the wires. When the flaps are brought together, they form an upraised ridge, which extends quite across the front wall of the vagina. A curved self-retaining catheter is then adapted on Dr. Sims' plan, which does not irritate. The patient should lie on her side. (Mr. J. Paget, p. 314.)

Place the patient under chloroform, and in the position for lithotomy. The legs being held by assistants, and the sides and and back of the vagina being held back by retractors, bring the fistulous opening into view. This will be aided by seizing the bladder just at the junction of its neck with the body, and holding it firmly upwards and forwards. The margin of the opening, for about the eighth of an inch in depth, must now be divided completely round with a sharp knife. Three or more silver wires, about eighteen inches long (see plate at page 313 of this volume) are now to be passed by means of the porte-aiguille, and brought together by the instrument as represented in fig. 2, thus leaving the parts in apposition (fig. 3). A silver button (fig. 4) must then be carefully passed over the end of each double suture, and a perforated shot passed over each wire (fig. 5) and pressed down upon the button, and then firmly pressed by a pair of long strong forceps. The wires must then be cut off close to the shot, leaving the parts as represented in fig. 6. Place the patient in bed, on a water cushion, on her side, with a catheter inserted into the bladder and allowed to remain there. Opium, with generous diet and wine, will be required. (Mr. I. B. Brown, p. 312.)

MISCELLANEA.

AMYLENE *as an Anæsthetic.*—Sulphuric æther is perfectly safe in whatever way it is used, because the dose of æther occupies so much space in the form of vapour that it cannot enter the system except by degrees, and its effects are necessarily produced gradually. A fatal dose of chloroform, however, occupies a very small space in the form of vapour, and unless largely diluted with air it may act with dangerous rapidity, and the point of safety be easily overstepped. The quantity of amylene vapour which requires to be inhaled occupies a volume intermediate between that of the vapours of chloroform and that of æther. Amylene has the advantage of preventing pain with a less deep stupor than is occasioned by other agents, and a further advantage is the almost entire absence of struggling and rigidity. (Dr. J. Snow, p. 409.)

Amylene for Children.—1. It is respired more easily. 2. The effect is more rapid. 3. The sleep is more natural. 4. They return more rapidly to their former condition. 5. There is no after inconvenience. (M. Giralds, p. 396.)

BELLADONNA POISONING.—Apply a blister to the back of the neck, and give an aperient with five grains of the sesquicarbonate of ammonia every hour or half-hour, according to the severity of the symptoms. (Dr. W. Jenner, p. 405.)

CEMENTS FOR TEETH.—Soften one drachm of gutta percha in hot water, then work into it half a drachm each of catechu and tannic acid, with a drop of essential oil. For use, soften a morsel, introduce into the cavity, and adapt while warm. An excellent cement may be obtained by dissolving one part of mastic in two of collodion; soak a small ball of cotton in this, clear out the cavity, and adapt carefully. (M. Vagner, p. 123.)

CHLOROFORM, *Administration of.*—As a simple method of preventing accidents, it is recommended to give a glass of spirits previous to the administration of chloroform, to keep up the action of the heart and prevent sickness or sinking. In case an overdose should be given, an injection of brandy and water into the rectum will be valuable. (p. 402.)

Anti-Hemorrhagic Action of.—The diminution of hemorrhage which it produces during operations, renders it of real service in cases where a great number of vessels are opened. In all cases in which chloroform has been given, it is advisable not to apply the dressings until some time after the operation, as the chances of hemorrhage when reaction takes place are much greater. (M. Chassaignac, p. 402.)

DATURA TATULA.—This plant yields a very powerful and efficacious medicine, much stronger than the datura stramonium. (Dr. Semple, p. 436.)

ENEMA SYRINGE, *Self-acting.*—The great advantage of this instrument is that it can be used with one hand with the greatest ease. It is very portable. Its construction is simple, ingenious, and novel. It is the invention of Messrs. Whicker and Blaise, of 67, St. James'-street. (A wood-cut will be found at p. 406.)

GLYCERINE.—Glycerine possesses remarkable nutrient and alterative properties. Dr. Lindsay believes it to be the active principle of cod-liver oil. He has carefully observed its effects in eight patients, who were all more or less anæmic, emaciated, and feeble: at the end of a month, they were all greatly improved in their general condition—they seemed plumper and stronger, and in some the countenance was even ruddy, and in most there was a marked increase in weight. It is most palatable when mixed with coffee, which may be sweetened by it instead of sugar. It may be added to tea, and it sweetens milk and cream very pleasantly; but its mixture with water is very palatable, and is the readiest and cheapest mode of administration. Its sweetness would probably render it a favourite with children. (Dr. W. L. Lindsay, p. 407.)

Endermic Application of Iodide of Glycerine.—In cases in which previously the alcoholic solution of iodine was employed, a solution of iodine in glycerine, in the proportion of one part to five, will be found more advantageous. It does not affect the skin like the alcoholic tincture, and may be applied for a long time to the parts about the neck and female breast without much inconvenience. If excoriations are caused, discontinue the application, and apply cold fomentations. The paintings should be performed once a day, and covered with gutta percha paper. They may be continued for a month without producing *iodism.* (Dr. Szukits, p. 408.)

HONEY *to make up Pills.*—Pills often acquire a degree of hardness which prevents their solution in the alimentary canal. Prepared with honey, they always remain soft, however long they are kept. (M. Thibault, p. 431.)

ISSUE-MAKING.—Cut a hole the size of the issue required in a piece of leather plaster, and apply it to the part, then introduce into this hole powdered potassa cum calce, just sufficient to cover the skin, drop upon this two or three drops of spirits of wine, and cover the whole over with a large piece of plaster. In twenty-four hours, the plasters may be removed. (p. 432.)

NEW CAUSTIC.—*Sulphate of Zinc.*—This is one of our most powerful and manageable caustics. It may be employed in the form of a simple powder, dried or anhydrous, and finely levigated, or in the form of a paste made with glycerine, in the proportion of one drachm of glycerine to an ounce of the dried sulphate of zinc—in this form, it will keep for any length of time ready for use; or an ointment may be formed by pounding together two drachms of axunge with an ounce of the dried sulphate of zinc. When applied in any of these forms to an open or ulcerated surface, the part to which it is applied is rapidly destroyed, and the slough usually separates on the fifth or sixth day: if any yellow or unhealthy tissue remains behind, it will require to be repeated immediately until the whole morbid tissue is removed, and a red, granulating, healthy wound remains, which will rapidly heal under any common application. Sulphate of zinc, like chloride of zinc, will not act as a caustic when the epithelium is entire, so that when we wish to apply it to a non-ulcerated structure, we must first remove the epithelium by a blister or a paste made with sulphuric acid and the sulphate of zinc: this will at the same time remove the epidermis, and also give the action of the mineral caustic. If this be too liquid, it may be prevented from spreading by enclosing the spot within a circle of oxide of zinc powder. The local suffering which it produces generally disappears more rapidly than that produced by arsenic or the chloride of zinc, and it may always be relieved by the temporary use of anæsthetics or opiates. The eschar from the sulphate of zinc separates sooner than after most other caustics. The eschar made by arsenious acid seldom separates before the sixteenth day, that made by the chloride of zinc usually separates by the tenth day, while that made by the sulphate of zinc separates as early as the fifth or sixth day. But besides the application of the sulphate of zinc to malignant growths, it may be used in many other cases where caustics are usually resorted to, and with equal success. The first of these which we will mention is the indurated inflammatory ulcer of the cervic uteri: here it should be applied through a speculum, or in the form of a medicated pessary, made up with axunge or glycerine. It may also be used in cases of lupus (alternating with other caustics) in the annoying and intractable ulcerous forms of impetigo rodens, in eating down the small, red, sensitive tumours so common at the orifice of the female urethra, and also in destroying ulcerated condylomata. (Prof. Simpson, p. 370.)

Poisoning *by Strychnine.*—Professor Haughton of Dublin, is of opinion that nicotine and strychnine are mutually antidotes to each other's action. He has performed some very interesting experiments on this subject. The nicotine is always easily procurable in the form of tobacco leaf infusion. (p. 403.)

Give two grains of powdered camphor, with half a teaspoonful of tincture of camphor, every quarter of an hour, if necessary, a little morphia may be added. Two cases are reported, which were successfully treated in this way. (Dr. Rochester, Brit. and For. Med. Chir. Review, Jan. 1857, p. 259.)

A case of poisoning by strychnia, is related by Dr. Pritchard of Filey, Yorkshire, in which from three to five grain lumps of camphor were successfully administered. Emetics and the stomach pump were employed, and artificial respiration by Dr. Marshall Hall's ready method was necessary, at one part of the tetanic spasms. Towards the decline of the tetanic movements, which lasted about twenty minutes, the camphor was continued with opium. (Lancet, April 25, 1857, p. 423.)

Tests for Strychnine.—By whatever means the red colour is produced, whether by the peroxide of lead, or manganese, the chromate of potash, &c.; when mixed with sulphuric acid it always depends upon the liberation of oxygen, which combines with the hydrogen from the strychnine to form water. (Mr. D. Lindo, p. 392.)

SENNA, *Agreeable mode of taking.*—Make a cold infusion of senna, then with the strained infusion, make coffee, as if with water. This is a very pleasant aperient which does not gripe. (Dr. Linthner, p. 431.)

SUTURE, *New form of.*—This form of suture was used by its inventor, Mr. Spencer Wells, in an operation for the cure of vesico-vaginal fistula. It is applicable in most cases in which the quilled suture is employed, and is more easily applied. Pass a pin, armed with a shot and perforated bar, through one edge, and then through the opposite edge of the wound, then pass a second bar over the point of the pin, and then a shot, which must be pressed by forceps on to the pin, so as to fix this bar in its place, then cut the pin off close to the shot. (Mr. Spencer Wells, p. 229.)

TOBACCO.—The use of tobacco should be forbidden during the prevalence of an epidemic of typhoid fever, it has the effect of relaxing the mucous membranes, and diminishing the vital force, and is very apt to produce or predispose to diarrhœa and intestinal lesion. Catechu is the best remedy for diarrhœa arising from this cause. (Mr. J. H. Fenn, Lancet, Jan. 3, 1857, p. 22.)

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ERRATUM IN VOL. 34.

Page 181, 17th line from bottom, for "three and a quarter inches" *read* "three-quarters of an inch." The error occurred in the journal from which the article was copied.

PRACTICAL MEDICINE.

DISEASES AFFECTING THE SYSTEM GENERALLY.

ART. 1.—ON REMITTENT FEVER.

By Dr. W. BALFOUR BAIKIE, formerly one of the Presidents of the Royal Medical Society of Edinburgh.

[In the treatment of this form of fever, especially as it occurs on the coast of Africa, quinine is undoubtedly the most powerful, and most generally applicable antiperiodic remedy which we possess. A form lately introduced called "Herring's unbleached sulphate," is quite equal to the bleached in its action, and is considerably cheaper. Its value in fevers is especially as an antiperiodic, its pure tonic effect being only secondary. Dr. Lawson, of the Army Medical Staff, thinks that cinchonia is equally valuable as quinine in fevers. Bebeerine also answers very well in similar cases, the dose being from one-third to one-half more than that of the sulphate of quina.]

One of the greatest improvements in tropical medical practice, of late years, has been the employment of quinine, not as a curative agent, but as a prophylactic or preventive. For this we are mainly indebted to the exertions of Dr. Bryson, R.N., who also recommends, not merely that it should be taken while in unhealthy localities, but that its use should be continued for a period of fourteen days after leaving such places, or during the average extent of the term of incubation. Attention to this has largely decreased both the mortality and the sickness of the African squadron to such an extent, as fully to justify our belief in this property of quinine. While up the Kwóra, or Niger, in 1854, I had ample opportunities for testing this virtue, and must unhesitatingly record my belief in its existence. While in the Delta, and in swampy districts, it was regularly administered, and its use continued for about a fortnight afterwards; and among twelve Europeans hardly any sickness occurred, during a stay of four months in what has hitherto been considered a most unhealthy river. It was taken the first thing in the morning to the extent of three or four grains, and occasionally it was repeated in the afternoon. On getting up at day-light a kind of craving for it was experienced, and after it had been swallowed it appeared to act as a slight stimulant; and, from my own individual experience, I can affirm, that, after swallowing my morning dose, all the langour of a close, damp, tropical night was dispelled, and I felt fit for any kind of duty; or in the evening, after a hard day's work in a hot sun, nothing was so refreshing, so exhilarating, as this invaluable drug. So marked were its effects, that if Dr. Hutchinson placed, as he usually did, a bottle of the aqueous solution on the engine skylight, even the black portion of our crew used to come unbidden and help themselves to a little. As a prophylactic, the most pleasant mode of administration is in the form of solution in wine, either in port or in sherry, the latter being perhaps the preferable. I have used bebeerine in a similar manner, and found it to answer very well. Sherry is employed for the "quinine wine" now supplied to the navy, which has for several years been made on the large scale with amorphous quinine. The only troublesome effect which I have observed from the continued administration of quinine is a tendency to rather obstinate constipation, but this can easily be guarded against by the occasional use of a mild laxative, such as a seidlitz powder. I am unable to say whether bebeerine is apt to produce a similar tendency. I had one opportunity of noting the action of a poisonous dose of quinine, as our steward helped himself one day, by mistake, to a wine-glassful of a strong solution, containing about two drachms. This produced speedy vomiting, with great depression, weakness and fluttering of the pulse, and epigastric pain. Stimulants had to be given, and, after the depression had passed off, relief was obtained by the application of counter-irritation over the stomach, and the internal administration of morphia, but headache and ringing in the ears continued for nearly two days.

It has been suggested that the constantly repeated use of quinine in this manner might, probably, gradually weaken its good effects, or render the recipient more or less insensible to its action. But such was not my experience: it seemed to be quite as active and potent at the last as at the first, and when the system was, so to say, tolerably saturated with the drug, the few cases of remittent fever which then supervened were of a very mild nature, and readily yielded to increased doses.

On reviewing the whole, I think we may draw the following conclusions:—

1. That remittent and intermittent fever are essentially the same complaint, differing only in degree and intensity.
2. That the endemic fevers of Africa, and of other tropical regions, are of this class.
3. That these may, to a great extent, be guarded against by the use of quinine as a prophylactic.
4. That the main therapeutic agents for the treatment of this class of diseases are anti-periodics.
5. That an almost invariable *sequela* is an affection of the spleen, so much so, as almost to be regarded as a stage of the disease.

The proximate cause of all remittent or intermittent fever, is undoubtedly the imbibition into the system of a peculiar poisonous influence known as *malaria*, which malaria or miasma is certainly a terrestrial emanation, emitted under certain circumstances from certain soils; those most favourable for its production being swampy places, and moist alluvial deposits, the principal requisites for its generation being heat and *previous* moisture. It is by no means necessary that water be present at the time; on the contrary, when the ground is quite flooded, the neighbourhood may be quiet healthy, but land which has been covered, and from which the water has subsided, if exposed to heat, or sheltered from the free action of the wind, is, generally speaking, the place where malaria will be most plentiful. Such districts may be looked on as "typical malaria localities," though miasmata occur, but in less abundance, in many other spots. That malaria is material, is, unfortunately, too truly evinced by its effects, though, from its subtle nature, it has hitherto escaped actual chemical detection. This is also shown by some of its physical properties, such as being acted on by the force of the wind, being more or less absorbed while passing over water, or its course being arrested by a belt of trees; and that it is ponderous, is proved by its existing chiefly in low spots, and close to the surface of the earth. Being known thus only by its consequences, speculations as to its composition or nature must be completely hypothetical. The sulphuretted-hydrogen theory may be at once dismissed, as were this the dangerous ingredient, chemists' laboratories, or common sewers, ought to be fruitful in producing ague; and spas, such as Harrogate or Strathpeffer, should be extremely unhealthy localities. The carbonic acid and carburetted-hydrogen views are still more groundless, and hardly require any refutation. It has been assumed that malaria proceeds from the *decomposition* of vegetable matter; but I have seen remittent fever attack a party of men when encamped on a dry, gravelly river-bed, with hardly a trace of vegetation near, and to be there as severe as it could be in the delta of an African river. Some ascribe the occurrence of these disorders to solar, or to lunar influence, overlooking that, in the case of the one, while the sun may act with an equal intensity over hundreds of miles, the disease is only to be found in certain restricted spots; while again, if the other be selected as the febrile deity, the complaint under her jurisdiction should only appear while she is visible, and during the greater part of her first and last quarters, mankind should remain exempt from the scourge. That remittent fever may follow exposure to the sun I do not deny, but it should be recollected, that here the sun acts not as the predisposing, but merely as the exciting cause, and can only produce this effect when the seeds of malarious poison already exist in the system. Until, therefore, malaria has been positively detected and analysed, let us be content to be aware that certain signs indicate its presence, an acquaintance with which enables us to take all due precautions. No one has yet isolated the morbific agent in Asiatic cholera, yet its existence cannot well be denied; why, then, believe in an invisible pestilential agent in our own country, and yet be sceptical of a similar unseen imponderable in other climes? In every sense of the word, malaria is a poison, and, like many more ponderable ones, as, for instance, alcohol, acts differently according to the amount imbibed. In small quantities, and especially if well diluted, it may be innocuous; somewhat increased, it may affect without overcoming health, and at this period may be got rid of by a vigorous effort, as a brisk walk, inducing copious perspiration, or by some sudden action on the nervous system, as a cold shower bath; let the dose be still greater, and the constitution is prostrated, and disease established. Different individuals, too, are differently acted upon by the same quantity, a small amount which to one would prove harmless, powerfully affecting another; the progress and result, also, are often considerably influenced by habit and custom—hence, it by no means follows, if a man be exposed in a malaria country, that an attack of a remittent is a necessary consequence; he may not inhale or imbibe the cause to a sufficient extent, his constitution may have strong powers of resistance, or from idiosyncracy he may be little under its influence.

Malaria is, therefore, terrestrial in its seat, and, possibly, of vegetable origin. Its materialism is further proved by the protection afforded to persons passing the night in swampy districts by wire gauze, or even by a thin mosquito curtain, under the cover of which sleepers may usually repose in almost perfect security, the fine structure seeming to act, like the safety-lamp of the miner, in preventing the ultimate atoms of the poisonous gas from passing through the minute net-work, and so reaching the individual. Malaria is given off in greatest quantity during the night, and it appears to be dissipated, or more or less decomposed by the direct action of the sun. Its poisonous properties, too, are most powerful at night, partly because of its greater abundance, and partly also, possibly, from the electrical condition of the human system, or of the atmosphere at that time, rendering all morbific agencies to be more potent for ill during that season. It has been observed, especially in the East Indies, that in journeying by night through unhealthy jungles, travellers who sleep are almost always attacked, while those who keep awake generally escape the febrile influence, an additional and very direct proof of the diminished powers of vital resistance while the body is in a state of exhaustion, or of repose.

The term "fever," has been terribly abused. We speak of "remittent fever," "intermittent fever," "continued fever," "putrid fever," "typhus fever," "typhoid fever," "brain fever," "hectic fever," "nervous fever," "idiopathic fever," "sympathetic fever," etc., etc., thus connecting by the indiscriminate use of one common term, most opposite ailments. Indeed, now-a-days, it is difficult to give a good definition of the word "fever." I can see no reason for continuing such very opposite diseases as "remittent," and "typhus," under the same heading. Remittent or intermittent, is of terrestrial or vegetable origin, is non-infectious, prevails chiefly in tropical climates; its career may be suddenly checked, but it may recur again and again; indeed, when the poison is once imbibed, it is never entirely got rid of, but it may, often at most indefinite periods, on the application of exciting causes, reproduce itself, and set in motion the regular phenomena of ague; and, lastly, it seems in its nature and course less of a blood disease, and more allied to neuralgia. Typhus, again, is of animal origin, is infectious, is mostly confined to temperate latitudes, runs a definite course, and can, therefore, be guided, but not cured; it usually occurs but once in each individual, one attack conferring a kind of future protection; it is a blood disease, and is closely analogous to the *exanthemata.* There is certainly a kind of connecting link between them in the "short," or "remitting fever," which has at different times prevailed epidemically in Edinburgh and other places, its periodicity resembling the one, while its infectious properties and its definite course indicating its analogies with the other. I cannot convince myself that what is called "common continued fever," differs essentially from typhus, but would rather fancy that the poison in both is the same—we may have *variola* with but a single pustule, why, therefore, may we not have typhus with a barely visible eruption? Besides, we know that in some exanthems, especially *Scarlatina* and *Rubeola,* the eruptions are not the most absolute or essential symptoms. It seems only complicating medical writings to increase the number of diseases without adequate reason, or to describe mere varieties as separate complaints. "Typhoid fever," again, or *Dothenenteritis*, does not present the characters of a true fever at all. At Haslar, I have watched many cases, and I never could satisfy myself that it was correctly classed with this nosological division. In it the intestinal lesion seems to be the primary disease, its only resemblance to our fevers being the usual concomitance of "*typhoid*" symptoms, which, however, mar occur during the course of almost any disease. Neither does it appear to be at all infectious, another strongly marked distinction from the true fevers of Britain. The invariable presence of the local lesion is, in my belief, a strong argument against its being a fever, which term strictly applies only to certain ailments, in which from the action of some morbific agent or poison, the system generally is affected, without the *essential* or *constant* occurrence of partial lesions, or local disturbances which may, indeed, show themselves, but only as accidental or occasional symptoms. As I hope at some future period more fully to enter into this subject, I shall content myself with merely recording the impressions made on my mind, resulting from a careful study of all so-called "fevers" for several years, which ideas are gradually becoming more strongly fixed.

Connected with this subject, one form of disease yet remains for remark, concerning which I write with considerable diffidence, from my want of personal experience of it. This is the so-named "yellow fever," concerning which such difference of opinion has existed, and even yet exists. Some make it specific and infectious, others specific and non-infectious; but after a careful consideration of the matter, I think the weight of evidence proves that it is non-infectious, and that it is not *sui generis.* Reasoning on general principles would lead to the belief that it is simply the *typhoid* form of remittent fever, occurring but occasionally, just as in this country we have during certain seasons a more severe, more typhoid type of our indigenous epidemics. Until recently, the best account of this disease was that of Dr. Bancroft, who, after vast experience, arrived at very decided opinions concerning it, and I think that no one can read the careful *resumé* of evidence given in the "Second Report on Quarantine," by the General Board of Health, without coming to the conclusion that this is the most rational and common sense view. During a severe epidemic of this scourge, in the West Indies, in 1853, I was informed by a medical practitioner who had ample experience, that the treatment by quinine seemed the most efficacious, which, if confirmed, would show it to be a periodic disease. I saw many of the men, who, during the same year, suffered from this disease in H.M.S., "Dauntless," and all of them while convalescing had intermittent; and again, during the past year, I have seen a large number of seamen and marines invalided from the West Indies, during the epidemic which then raged there, and in all of them, without any exception, the disease gradually merged into intermittent, requiring the usual treatment. Believers in the specific nature of "yellow fever," would say that this only proved that they had not had real yellow fever, but only a bad form of remittent, closely resembling it; but against such assertions can be produced the authenticated statements of the medical officers who saw these persons when they were first taken ill, all of which state clearly that the disease was what is known in the West Indies by that designation. Taking the latest publications on this tropical epidemic, those of Drs. John Davy and Blair, we see in their accounts evidence of a terrestrial poison, local in its origin and influence, of great potency, overcoming the vital powers, and speedily inducing a typhoid condition, just what would *a priori* be expected in the severest form of remittent. The "Bann" fever, the "Bulam fever," of Sir Wm. Pym, and the deadly fever of the "Eclair," can all be brought under the same head, each being distinctly to be traced at first to malarious agency, and in the case of the latter, continued probably, by an influence not sufficiently taken into account, "the existence on board of the ship herself of the conditions necessary for originating and perpetuating poisonous miasmata," a circumstance which appears also to have distinctly occurred in the brig "Donostiarra" at Passages in 1823. The "Eclair," now named the "Rosamond," has more lately been again in commission, once in the West Indies about 1852, when remittent fever breaking out, it assumed on board of her such a bad type, that the cases were considered to be yellow fever, and she had eventually to to be sent to England. Some of her sick I saw, and they, as convalescence approached, had distinct intermittent. So strongly am I convinced of the specific identity of yellow fever and remittent, that should I ever have occasion to deal with this disease, the treatment I should first try would be that by quinine. "Yellow fever" occurs not only in the West Indies, but along the east coast of South America, in Africa, and in the south of Europe, especially in Spain, but only during certain seasons, and it is always local, and can be avoided by leaving the unhealthy spots. That it is non-infectious, appears to be well established, and this is of much importance, as on it depends the question of quarantine, which, as applied to "yellow fever," is useless and vexatious. Not one of the alleged cases of importation have ever been proved, a coincidence, or a *post hoc* being often hastily assumed as a *propter hoc*. Some minds are so constituted that they cannot hear of this or allied forms of disease, without the idea of infection at once prevading all their thoughts and reasonings, yet with the advance of our medical knowledge, and with a rigorous search after truth, sounder and more liberal views are gradually and steadily gaining ground.

There is a seeming connection between remittent fever and dysentery, not very easily to be explained, but still very evident. Both occur in like localities, both seem to proceed from exposure to the same causes, they often run into each other, and the dysentery of hot climates is generally benefited by the use of anti-periodics. That there are varieties of dysentery is well known, but I even suspect that separate forms of disease have been described under one name. The acute dysentery of the East Indies, and the more typhoid dysentery of China differ not only from each other, but likewise from the form prevalent in Africa, and from the idiopathic dysentery of colder climes, and they require, likewise, very distinct modes of treatment.—*Edinb. Med. Jour., March* 1857, *p.* 809.

2.—ON THE "ROSE SPOTS" AND THEIR METAMORPHOSES.

Dr. Addison directed the attention of his class to some well marked cases of typhoid and typhus recently in his wards at Guy's Hospital. The observations of Dr. Addison are of peculiar interest, as they are the result of forty-four years experience of these diseases, during which interval, he believes, the characters of continued fever in London, as observed by himself and Dr. Bright, have undergone a series of very remarkable changes. The evidence, according to Dr. Addison, is all in favour of Dr. Jenner's distinctions of typhoid and typhus being different *species* of fever, and not merely varieties of one and the same disease. But Dr. Addison has been so often astonished and deceived at the changes undergone by fevers, that he recommended his class as yet to receive the doctrines of Dr. Jenner as it were provisionally, in default of any more practical solution of the difficulty. The term typhoid is a bad one; and we cannot see that the term rose spots is happily chosen, any more than bronzed skin—a term never used by Dr. Addison for the disease of the suprarenal capsules.

In well marked typhus, Dr. Addison singled out for his class several symptoms, which contrast very strongly with those of typhoid. Typhus comes on more suddenly, and prostrates the patient more completely than typhoid. The bowels in typhoid are generally irritated, and in a state of diarrhœa; whilst in typhus the bowels, almost as a rule, are constipated. Typhoid agrees more with the general characters of gastric fevers, while typhus symptoms are rather referred to the brain. Typhoid seems a more manageable affection than typhus; and while typhus is a highly infectious disease, typhoid is free from many of the dangers common to typhus, scarlet fever, and various members of the order exanthemata. Typhus agrees rather with what is popularly known as brain fever, where it is well to shave the head and apply cold, but not to bleed; while typhoid (or ileotyphus, as it is called on the continent) is not, as surgically considered, a form of typhus, but a new disease, answering very much to the signs of gastritis or gastric fever.

When the disease now known as typhoid first made its appearance in London, Dr. Addison stated that he and Dr. Bright often mistook it for measles; but since then the so called "rose spots" have undergone an infinite variety of modifications. In some patients, it is well to remember, as has been most ably eliminated out of a mass of facts by Stokes and Jenner, that the rose spots are absent, though all the other symptoms of typhoid are present. Of course, in typhus, we have the peculiar mulberry spots, and the skin is dusky. The pulse is not of any value as a diagnostic mark in either fever. In the case of B. D., a marked instance of typhus, now in Guy's Hospital, and with respect to which Dr. Addison gave some extended clinical remarks this week and last, all the symptoms of typhus are present. The poor woman has also coagulable urine, another very common phenomenon in typhus, caused perhaps by congestion of the kidney.

"Feed fevers," was the advice of one of the most philosophical of our recent authorities on this subject: and with this doctrine Dr. Addison entirely agrees, beef-tea, wine, and even brandy in some cases, being the great remedies on which the medical attendant must rely, rather than on medicine. The heroic plan of treatment by mercury or ten-grain doses of quinine, in either typhus or typhoid, he does not approve of. Cinchonism may suit in remittent or intermittent varieties of fever; but if, in typhus especially, we can keep a a patient alive up to a certain day, he will go through the remainder of the fever without accident. Dr. Addison occasionally recalls to his memory a time when bleeding was the fashion in typhus, on the supposition that the essence of typhus was inflammation of the brain and its coverings; but no mistake could be more deplorable.—*Association Medical Journal, November* 22, 1856, *p.* 993.

3.—*On the Febrifuge Properties of Apiol.* By Dr. Joret.—The author of this paper considers that apiol possesses all the advantages of arseniate of soda in the treatment of intermittents, without the inconveniences which often attend the use of the arsenical compounds; that the safety of its action is also quite manifest, and that the dose of it may be increased without fear of producing any other effects than those which are habitually observed after the administration of the sulphate of quinine. Three cases are adduced in support of the statements advanced, and care was taken not to administer the febrifuge until the fever was completely developed, nor until the succession of the fits, each time brought nearer together, caused a fear of greater severity in the fits about to follow. The author remarks that the sulphate of quinine will long remain the best anti-periodic, and that recourse must always be had to it by preference whenever the object is to cut short a dangerous intermittent, the approaching paroxysm of which might be fatal; but he remarks that the apiol acts with the same safety, that it may be administered with the same advantage, in all fevers where it is not of much importance to put a stop to the paroxysms a day earlier or a day later, and that there is nothing to offer any obstacle to its therapeutical employment.—*Brit. and For. Med.-Chir. Review, Jan.* 1857, *p.* 258.

4.—*The Bittera Febrifuga as an Antiperiodic.* By M. Delioux.—The practitioners of Martinique having transmitted to Europe highly favourable accounts of the febrifuge qualities of a plant found there, the Minister of Marine has directed that its efficacy should be tested at the different naval hospitals; and in this paper, M. Delioux furnishes an account of the results of the trials he has made of it at Brest. The plant is one of the Rutaceæ, and has been termed *bittera febrifuga*, from the English term "bitter-ash," by which it is popularly known at Martinique. Its active principles are resident in a bitter resinoid, and in a bitter principle, which it is proposed to term *bitterine*, and which is very analagous, if not identical with *quassit* or *quassine*, obtained by Wiggers from *quassia ámara*.

The bittera may be administered in the form of powder. infusion, or extract, or the bitterine itself may be given in pills. The intense bitterness of the drug disinclines some patients to it. M. Delioux has, as yet, only given it in the form of extract, made into pills, administering from 10 to 15 grains, in divided doses, during the pyrexia. This, he believes, is a better mode of giving this and other bitter tonics, used as succedanea to quinine, than prescribing them, as in the case of quinine itself, in a large dose just before the paroxysm. Although declared in the Antilles to be almost an infallible febrifuge, sometimes superior to quinine itself, M. Delioux believes it to be, in this respect, not only much inferior to quinine, but also second even to arsenic,—superior to the latter, though it be, in the tonic power it exerts upon the digestive and general system. After this, however, it should be ranked as one of the best succedanea ; and, doubtless, as a good bitter tonic it is destined to play an important part in the relief of many organic and functional debilitated conditions, and especially in the anæmic and cachectic states resulting from paludal intoxication. In a great number of asthenic diseases, in anæmia, in chlorosis, in convalescence from fever, in exhaustion from hemorrhages or discharges, and whenever it is desired to impart tone to the digestive and assimilatory powers, the bittera is indicated. In some forms of gastralgia, as far as M. Delioux's experience has gone, he believes it will prove very useful.—*Med. Times and Gazette, April* 4, 1857, *p.* 344.

5.—SULPHUR EXTERNALLY IN THE CURE OF RHEUMATISM.

Sulphur is an old and favourite remedy in many forms of rheumatism, and in none more so than in sciatica ; usually, however, it is administered internally, and we do not remember having seen it made use of in the mode in which it is employed by Dr. Fuller, at St. George's Hospital. If the sciatic nerve is the part implicated, Dr. Fuller orders the whole of the affected limb to be encased in flannel, thickly sprinkled with precipitated sulphur. This flannel is kept in its place by means of a bandage, and the whole limb thus bandaged is "covered with oiled silk or gutta percha, which has the effect, not only of increasing the warmth and confining the vapour of the sulphur, but also of obviating the disagreeable odour consequent on the application of the remedy. This bandage should be kept applied both day and night. Contrary to what might be expected, *à priori*, absorption of the sulphur takes place rapidly, and the breath, the urine, the secretions from the bowels, and the cutaneous exhalation, unmistakeably attest its presence in the system." (Dr. Fuller 'On Rheumatism, Rheumatic Gout, and Sciatica,' ed. 2, pp. 456-7). If the pain is seated in the shoulders, or other parts to which the sulphur cannot be applied in the mode above specified, Dr. Fuller orders the compound sulphur ointment to be rubbed in for twenty minutes, night and morning. In rheumatic affection of the shoulder-joints, and in those instances, in which the pain remains fixed about the insertion of the deltoid muscle, Dr. Fuller assures us that no external application proves equally useful ; and, as he has two patients at present under his care at St. George's Hospital, for whom he has prescribed this remedy, we hope, ere long, to be able to confirm this statement. The value of sulphur externally in sciatica is dwelt upon at some length in the second edition of Dr. Fuller's work, and a case we have recently observed under his care at the Hospital bears out the statements there made as to its efficacy. The patient, a man 33 years of age, had been suffering from sciatica on the left side nearly nine months, and had been under treatment during the greater part of that time. The usual remedies had been employed without success, and the man's health was beginning to fail. Dr. Fuller prescribed full doses of the sesquioxide of iron internally, and applied sulphur externally, in the manner already specified. In little more than a week the pain was much relieved, and had ceased altogether in less than a month. The Doctor remarked that this case was one only out of many in which he had observed the greatest benefit from the external use of sulphur, but that the remedy is not equally successful in all instances. When the case is attended with feverishness, and with acute pain, even when the limb is at rest, he has never seen relief result from its employment, nor has he when the skin is dry and inactive. In such cases the sulphur remains unabsorbed for many days, or even weeks, and is, therefore, incapable of exerting its curative action. But when there are no symptoms of active disease, when the pain is of a dull, aching character, and is felt chiefly, if not solely, when the limb is in motion ; and when, more especially, the skin acts freely and the sulphur is rapidly absorbed, so as to require renewing every third or fourth day, then, according to Dr. Fuller's observation, nothing proves so serviceable as the sulphur bandage.—*Med. Times and Gazette, Jan.* 24, 1857, *p.* 87.

6.—CHRONIC RHEUMATISM AND SCIATICA TREATED BY THE EXTERNAL USE OF SULPHUR.

By Dr. O'Connor, Physician to the Royal Free Hospital.

[The use of flannel bandaging, as well as the external application of sulphur to the part, are not new remedies in rheumatism ; but we believe that Dr. O'Connor is the first who has had recourse to their conjoint use in these affections, as well as in sciatica. The following cases will illustrate their good effects :]

The first is that of a woman aged 45, married, but without family. For some years previous to her marriage, eight years ago, she had been a cook in a gentleman's family. She had always good health, and did not complain of any uneasiness until the latter end of the year 1854, when she was attacked with a painful affection of the left shoulder-joint, supposed at the time to be rheumatic, but for which she had no regular attendance. After a time, the joint became somewhat stiff, swollen, and painful, so that she could not move it in any direction. In this state, she was admitted an out-patient of one of the metropolitan hospitals, where, on examination, she was told the condition of the joint depended on some amount of dislocation. After some time, however, she was transferred to one of the physicians, under whose care she continued for some time; but not deriving any benefit from the treatment had recourse to, she presented herself at the Royal Free Hospital in August, 1855, and was admitted under the care of Dr. O'Connor. At this time, the patient complained of severe pain about the head of the humerus, but more particularly before and behind the acromion process of the scapula. The joint was somewhat swollen and immovable ; the arm lay close to the body, with the forearm flexed across the chest. She had scarcely any power over the muscles of the forearm ; they appeared as if paralysed, and the points of the fingers and thumb could not be brought together. Dr. O'Connor, viewing the case as one of chronic rheumatic arthritis, but accompanied with more pain than usual in those cases, after a brisk purgative, ordered leeches to be applied to the painful part, and calomel and opium were given internally, and persevered in until the mouth became affected, when considerable relief was afforded, although pain and immobility of the joint still existed. The alternate application of leeches and blisters were next tried, with good effect, and the iodide of potassium, in five-grain doses, with liquor potassæ and decoction of sarsaparilla three times a day. This plan of treatment was continued for some time ; still the motion of the joint was but trifling, and the hand could not be raised even so high as the mouth, but the pain was considerably abated ; it was most severe at night.

In this state, ten weeks after admission, Dr. O'Connor determined to try the effect of the external application of sulphur and flannel bandaging to the joint. The whole of the limb, including the shoulder-joint, to the tips of the fingers, was covered with sulphur, over which was placed a bandage of new flannel, and sheets of wadding were next wrapped round the limb. All the remedies were now discontinued. In less than twenty-four hours the pain became sensibly less, and in six days it ceased altogether. There was increased motion of the joint, and great power acquired over the muscles of the forearm and hand. The application was now continued for eight days longer, and the patient had nearly acquired the power of moving the arm in any direction. Dr. O'Connor informs us that this patient was subsequently admitted under his care for an attack of bronchitis, when he had an opportunity of examining the shoulder-joint, in which the motion is nearly perfect. He looks on this case as one that would ultimately lead to that condition of the shoulder, the consequence of chronic rheumatism, so well described by Professor R. Smith, of Dublin, and subsequently noticed in London by Mr. Canton, Mr. Wm. Adams, and Mr. Holmes Coote, if remedial treatment had not been had recourse to in time.

E. P——, a man, aged 42 years, was admitted under Dr. O'Connor's care, Sept. 26th, 1855, complaining of a painful and swollen state of the knee-joints. He had been for some years a policeman, and had suffered in early life from a severe attack of acute rheumatism, from which he recovered after an illness which lasted for nearly three months. He frequently suffered from more or less pain in the knee-joints, especially at night; he also complained of pain in the scalp and along both shins. There was reason to suppose the existence of syphilitic taint, although the patient declared he never had any venereal affection. The alterative mixture of the hospital, consisting of iodide of potassium, liquor potassæ, and decoction of sarsaparilla, was ordered three times a day, and Dover's powder at night. These were continued without benefit for ten or twelve days, at the expiration of which time Dr. O'Connor determined to have recourse to the external application of sulphur, which was applied as in the preceding case. On the 17th of October, seven days after the application of the sulphur and bandaging, the pain and swelling had altogether disappeared from the joints as well as from the scalp, and the patient was discharged cured on the 28th of October.

The next case we have to record is one of sciatica, in a servant girl aged nineteen years, of a florid complexion, who constantly suffered from constipation of the bowels, and had never menstruated regularly. She was admitted on the 28th of November, 1855. In this case, nearly every known remedy was had recourse to, including the internal use of croton oil and the application of a hot iron button rapidly passed over the course of the sciatic nerve, but without any permanent benefit. The whole of the limb was now covered with sulphur, and the flannel bandage applied with as much tightness as was proper. Sheets of wadding were wrapped round as in the preceding cases. The bowels were kept open by ordinary aperients, and in twelve days from the application of the sulphur there was perfect freedom from pain, when the patient was discharged cured.

Although in the cases we have recorded, as well as in very many others that have been under the care of the same physician, very good results have followed this plan of treatment, still there are many, as he informs us, in which it has not been beneficial, but those cases are of too long standing, and beyond the reach of any known remedy. In order that good results may follow the application of the sulphur, it is necessary that it should not be disturbed for some days, otherwise its absorption, upon which depends its curative effect, will be prevented.—*Lancet, Feb.* 21, 1857, *p.* 184.

7.—*On the Treatment of Gout and Rheumatism by the Silicate and Benzoate of Soda—combined with the preparations of Aconite and Colchicum.* By M. Socquet and Bonjeau.—In a memoir lately presented to the Académie Imperial of Paris, MM. Socquet and Bonjeau have proposed, in gouty and rheumatic affections, the employment of the silicate of soda and benzoate of soda. Silicate of soda facilitates the elimination of uric acid, and its influence may extend so far as to render the urine alkaline. This salt, moreover, by its tonic action upon the digestive functions and its diuretic properties, is said to be far superior to the carbonates of soda or potash, which are so constantly employed in the rectification of the uric acid diathesis. The benzoate of soda transforms uric acid into hippuric acid, the combinations of which are extremely soluble, while those of uric acid are hardly soluble at all. This medicine, in thus modifying the part of the acid which may have escaped the action of the silicate of soda, will thus contribute also to diminish its quantity. Colchicum will rapidly carry away, by the urinary passages, the remains of the uric acid which the blood may still contain. Aconite is used to act specially upon the painful part.—*Brit. and For. Med.-Chir. Review, Jan.* 1857, *p.* 265.

8.—ON THE THERAPEUTIC EFFECTS OF CHARCOAL IN EPIDEMICS OF MEASLES AND CHOLERA.

By Dr. Wilson, Colonial Surgeon, New Zealand.

[The author observes that throughout the course of the epidemic (measles) he has never observed diarrhœa to be beneficially critical, but otherwise, and has hence never hesitated to check it, for which purpose he has found no remedy so efficient as the ordinary wood charcoal in powder, and when assiduously and promptly exhibited, it has never failed, within his knowledge, to have a promptly beneficial effect. His attention was first drawn to it by some observations of the late Dr. Robert Jackson, in his 'Sketch of Febrile Diseases.']

Following in the footsteps of that very experienced physician, my first trials of *charcoal* as an internal remedy, were in cases of simple acute dysentery; though I would observe that, as in the then sphere of my practice, dysentery was not a disease of frequent occurrence, my opportunities of testing the powers of the remedy were too limited to do more than to satisfy myself that there was no exaggeration in the doctor's statements. So far, indeed, from this, that, as his experience had foretold, I found the result of its administration, in almost every case, the echo of his own words—"soothing and pleasant beyond the effect of common remedies, the excess of the evacuations becoming not only restrained, but the matter changed from blood and mucus, putrid and offensive, to figured feculence."

As illustrative of the words now quoted, I shall give here the short statement of a case to which I was called in consultation nearly twenty years ago. The patient was the child of the British consul at Port Saint Mary in Spain, was about five years of age, and had been under the influence of the disease two or three days before my visit. The family physician was a Spaniard of the *medicine expec-*

tante species, and so leniently *Broussaian*, that he had confined his treatment of the disease to the application of a couple of leeches, and the ordering of a ptisan, composed of a solution of gum-arabic in an infusion of the blossoms of the common mallow, and of three other equally simple wild flowers, which together, and from time immemorial, over all the Peninsula, have maintained the pre-eminent designation of "*Las cuatro flores cardinales*," but which, according to my experience—and I drank the infusion plentifully, on one occasion, for months—has been acquired more likely from a harmless placebo quality, than from any curative virtue they have thus nominally got credit for. The father, an intelligent Englishman, had had the prudence, on the day of attack, to give the child a dose of castor oil; but, notwithstanding, the disease, at the time I saw the patient, was still crescent, face greatly flushed, fever high, tormina severe, and tenesmus urgently frequent; dejections, mucus and blood, and coming off in a very frothy state. He had not slept for nearly twenty-four hours, and in every way great distress was indicated. My prescription was novel to, and did not meet the approval of the medical attendant; but, as I had the confidence of the parents, he did not persist in opposition. Accordingly a table-spoonful of common levigated *charcoal* was rubbed up with the white of an egg, and these, being diffused in eight or ten ounces of chicken broth, the mixture was exhibited per anum. It was returned almost immediately, but a second, which followed so soon as it could be prepared, was retained, and now, or in less than five minutes, the patient dozed off into a quiet sound sleep, which continued uninterrupted for the space fully of five hours. Thus, as Dr. Jackson observes, in relating a similar case, "the relief was instant and perfect," the fever promptly abated, and, in short, I may sum up that the disease was at once arrested, thenceforward requiring, in ulterior treatment, only one or two laxative doses of castor oil to perfect the cure.

[Until 1834, at which time an outbreak of epidemic cholera occurred at Jerez, in Andalusia, where the author was residing, he had no opportunity of testing its efficacy administered internally.]

I was not, at the time of the occurrence, residing in Jerez in a professional capacity; but, under the strange circumstance that some of its *medicos*, early in the epidemic, *absconded* therefrom, and that, to meet the dire exigency of the visitation, not the tithe of an adequate number remained behind, it was no time to be simply a looker on. Accordingly, I proffered my services to the government authorities, and an hospital being put under my charge, I had now, and in all ways, ample opportunity of acquiring some knowledge of the disease. By a reference, then, to my notes of that period, I may here introduce some detached remarks therefrom, relative to the use of *charcoal* in it, whether employed as a prophylactic or as a remedial agent.

"In the early part of the first stage, where there is only some anomalous feeling of *malaise*, attended with slight laxity of bowels, and which has obtained among the Spaniards the name of *colerina* or little cholera, a few doses of Lavitz's *prepared charcoal*, both by the mouth and by enema, and the exhibition on the succeeding day of an oil laxative, and living cautiously for a few days, are sufficient means, generally, to check the farther advance of the disease.

"Throughout the first stage of formal attack, when I could prevail on my patients to take *charcoal*, it was administered; but many objected to take it by the mouth, and it was not with the multitude I could insist, since I could not compel obedience, neither give time to superintend its necessarily frequent administration nor place reliance on the quantity or *quality* given. From repeated experiments on myself and others, I am well assured that the latter is of considerable consequence, the remedial power being much deteriorated by exposure to the air. Therefore, it should not only be very carefully prepared, but be kept for use in accurately stoppered bottles or phials. I would farther observe that, hitherto, I have always used the *charcoal* prepared from the olive-root, which is a compact, hard wood—not, however, from choice, but merely from its being that which most conveniently offered. But I consider it as not improbable that experience may detect a difference of medicinal quality in opposite sorts. Thus we see gunpowder manufacturers adopt, as giving strength to their compound, *charcoal* made from the willow and such like light woods. Hence, we may argue that, if levity indicates, in the composition of that, a superiorly energizing effect, so may the *charcoal* of the willow, cork, or sponge, be found to be superiorly efficacious, as a medicine, to that prepared from the heavy woods."

As a prophylactic, after the publication of some instructions to the people, the *charcoal* gained a speedy and extraordinary reputation; and some of the blacksmiths, who got from me the mode of preparing it in large crucibles, acknowledged to the gain of seven and eight dollars a day by retailing it in small quantities to the multitudes of applicants. But, without having once tried whether it had or had not virtues, all my *confrères* were doggedly opposed to its administration; and much of the people, in some degree influenced, but greatly more from the novel, yet homely character of the article, as also from the required largeness and frequency of the dose, could not readily be brought to rely confidently on it as a remedial agent in so hurrying a disease. Ultimately, therefore, when, from the general explosion of the epidemic over the city, I was obliged to post from patient to patient, or rather from house to house, and to square, and lane, and street, it was only in very occasional cases that I could continue its use by the mouth. But, from first to last, I persevered with, and met no baulking to its employment in the form of glyster. But it was given also, in numerous cases, by the mouth, and with such general good effect, as to have impressed me with the firm conviction that, in all stages of the disease, it is a most beneficial adjuvant, and anterior to the asphyxial stage, and in that of reaction, most eminently curative.

It may possess a specific febrifuge power or quality, but I am disposed to ascribe its virtues to its general antacid and absorbent property, and no less to its controlling and corrective power over all ferments—vinous, ascescent, and putrefactive. Hence, as it was my belief that foul, morbid fermentation in the stomach and bowels, was one of the most constant symptoms, and not the least of aggravating causes in the progression of the disease, I could see nothing more likely to correct and mitigate it than the agency of this medicine, and more so, as I found that, by restricting my patients to the use of those articles the least liable to run into the fermentative process, as *e.g.* rice water, linseed tea, and unleavened cakes or biscuit, were the most likely to effect a cure: while, on the other hand, inattention to such dieting, or deviation therefrom, were the most certain means of both accelerating and aggravating the disease.

Generally speaking, Spaniards are very averse to *post-mortem* examinations; but the hospital which I superintended, together with, at that sad time, the almost utter regardlessness of the living as to what became of the dead, afforded me every facility; and I availed myself thereof as often as my professional avocations would permit. And in corroboration of the opinion that a fœtid, fermentative state of the intestinal contents has greatly to do, if not in promoting, certainly in aggravating, the disease, I can affirm that, invariably, I found these, notwithstanding the gallons of watery fluid that had passed off during the course of the disease, most offensively feculent, and not unfrequently remarkably scybalous. I do not, of course, advance this last circumstance as extraordinary, supposing, as we may, that the fluids of the system poured into the alimentary canal, acted thereon simply as saline purgatives often do in dropsies, in the autopsies of which disease we often find impactions of scybalæ of very old date. Thus, in such, on one occasion, I was present at the detection of the seeds of the prickly pear, which, it was accurately ascertained, had been eaten six months before, notwithstanding that saline purgatives had repeatedly been used intermediately. But the important inference to be drawn from the circumstance of the retention of putrid feculent matter, and viewing this as the pabulum, is the necessity that exists of administering oily laxatives during the stage of reaction, or, at latest, so soon as that begins to abate; for I found, until I adopted this plan of treatment, that my cases of relapse were frequent, and not unusually fatal. But, what experience and *post-mortem* autopsy proved to me, could not be made alike obvious to my patients. Accordingly, I met with much, and very often fatally-ending, opposition to this evacuating practice, as they could not be made to comprehend how a disease of so untowardly diarrhœtic a character, was to be otherwise than deteriorated by the administration of laxatives.

I have never had an opportunity of using *bone charcoal* internally, but, from its ascertained superior powers as a deodorizer, I consider that it deserves to be tested by experiment in such affections as I have here indicated.

I may add, in conclusion of this short notice regarding *charcoal*, that during the course of the Jerez epidemic now observed on, I was affected repeatedly with premonitory symptoms, and once to the degree of what, as already observed, was denominated by the Spaniards *colerina*. But, on every one of these occasions, I derived almost immediate relief from a dose or two thereof; and thus, no doubt, I escaped the endurance of a more formal attack.

Taken daily as a prophylactic, the only inconveniences complained of were its sudorific and constipating effects.

In gastrodynia, when ascescency is a prominent symptom, it gives, though only temporary, very prompt relief.—*Edin. Med. Journal, Nov.* 1856, *p.* 439.

9.—EXPERIMENTS ON THE ACTION AND SOUNDS OF THE HEART.

By Dr. G. B. Halford.

[Dr. Halford has recently performed some original experiments on the heart's action and sounds, at some of the London hospitals. The whole of the anterior part of the thorax of the dogs which were the subjects of experiment was removed under the influence of chloroform, artificial respiration being maintained by the nozzle of a bellows introduced into the trachea. The pericardium is left entire. The following are the principal facts to be noticed:—]

1st. When the ventricles contract—that is, at the time when the impulse is given by the ventricular fibres, the bases of the ventricles descend towards the apex, and the auricles immediately follow, occupying part of the space previously taken up by the ventricles in their relaxed, distended state, and which is explained by the loss of their contents during contraction.

2nd. When the auricles contract, they recede in the opposite direction, and the distended ventricles again occupy the space receded from, by the contracting auricles.

The lecturer showed that, by the above simple action, a reciprocity or compensation exists between the auricles and ventricles, and that, although the chambers of the heart are continually receiving and discharging their contents, yet this is so regulated as that the bulk of the contents of the pericardium (in which must be included the first portions of the aorta and pulmonary artery) is always the same. For instance, at the time of the contraction of the ventricles, the loss of the bulk of the fluid they are ejecting is made up, or compensated for, by the bulk of the fluid pouring into the auricles, and by the increased capacity, and hence increased bulk, of the pericardial portions of the aorta and pulmonary artery: and so on; but want of space prevents further following out this interesting part of the subject. The lecturer asserted that if the ventricles contracted in any other direction than that of from base to apex, the auricles could not receive blood, but that, according to his views, and to the evidence of one's eyes, the contraction of the ventricles permitted, by the recession of their bases, the pouring in of blood to the auricles ; and, further, that the contraction of the auricles both caused and permitted of the complete distension of the ventricles.

3rd. When the ventricles contract, and their bases descend, the aorta and pulmonary artery, being elongated by injection, likewise descend, and their pericardial portions at the same time are suddenly and greatly distended, but by their elasticity they as suddenly react upon their contents.

4th. The impulse is felt all over the ventricles during their contraction. The finger and thumb spanning the diameter of ventricles are perceptibly further separated during the contraction of the ventricles, and approximated during their relaxation.

5th. The apex is not tilted forward during the contraction of the ventricles, so as to give any blow to the thoracic parietes. From what is stated above, it is evident that any part of the ventricles being in contact with the parietes of the chest, will give, during contraction, an impulse, an *apparent* blow ; and in disease also, the heart beating here and there as the case may be, whether one of enlargement or displacement ; but they who, marking such impulse, refer it to the heart's apex, had better begin to reflect, and to be more exact both in their physiology and pathology.

The next experiment referred to the origin of the sounds of the heart, which the lecturer contends is valvular, and to prove which he proceeded thus: The heart being exposed as above, the sounds were perfectly audible through the medium of a stethoscope. A pair of bull-dog forceps was applied to the superior vena cava and another pair to the inferior vena cava, just as they enter the heart ; the pulmonary veins, entering the left auricle were also compressed between the finger and thumb, so that the heart became empty. A stethoscope was now applied, and, although the heart contracted forcibly, no sound was heard ; the forceps and the fingers were removed—that is, blood was re-admitted—and both sounds returned. The vessels were again compressed, and all sound ceased ; the blood was again permitted to flow through the heart, and both sounds were restored.

In the above experiment, by preventing the flow of blood through the heart, the valves cannot be made tense, and hence cannot produce sound ; that is to say, the mitral and tricuspid have no longer to resist the backward pressure of the blood during the ventricular contraction, while the semilunar do not move, being kept firmly shut down by the pressure of the blood in the aorta and pulmonary artery ; but remove the fingers and forceps—i. e., re-admit blood, and then the mitral and tricuspid valves are not only called into play, but thrown into powerful vibration, resisting the pressure of the blood in the ventricles; the semilunar valves are forced upon and again called into action and made tense, and both first and second sounds are restored. Therefore the first sound is heard when the ventricles contract, and the auriculo-ventricular valves are made tense and completely separate the cavities of the ventricles from the auricles, and the tension of these valves produces the first sound. When the second sound is heard, the ventricular systole has ceased, the aorta and pulmonary artery have reacted on their contents, and the cavities of the ventricles are separated from the systemic and pulmonary systems by the closure of the semilunar valves, the tension of which produces this sound.

Before concluding his remarks at the several hospitals, Dr. Halford stated that he wished particularly to draw the attention of the profession to the writings of Billing and Bryan. Dr. Billing ('Lancet, May 19th, 1832.' 'First Principles of Medicine.' 'On Disease of the Lungs and Heart') had been the first to state accurately the cause of the sounds, and his writings were of great value to all who cared to reflect. Mr. Bryant ('Lancet, February 8th, 1834; and other parts of the same Journal in 1833 and 1832') had not only most logically supported the same views, but had published a theoretical paper on the heart's action, which his (Dr. Halford's) subsequent and repeated observations had proved to be correct.—*Lancet, Jan.* 3, 1857, *p.* 20.

DISEASES OF THE NERVOUS SYSTEM.

10.—ON THE EFFECTS PRODUCED ON THE BLOOD BY MENTAL LABOUR.

By Dr. Theophilus Thompson, F.R.S., &c.

[This paper was read before the Medical Society of London in November last.]

Intellectual, like muscular action. probably involves an expenditure of living material, and introduces a changing series of particles, those which have been used giving place to others which come with the energy of new life to perpetuate the action. Stagnation may induce decay, but undue persistency, haste, or intensity, especially in creative efforts, may occasion waste. The author proceeded to adduce examples. One instance was an account-keeper, who, after being for some weeks engaged twelve hours daily at the desk, lost the power of fixing his attention, and became affected with such sensitiveness of the nervous system as to be frequently kept awake at night by tingling of his skin, and, when he fell asleep, disturbed by frightful dreams. There was no emaciation, loss of appetite, or disturbed digestion, and the urine was natural with the exception of a few oxalate-of-lime crystals;

but there was a strong venous hum in the jugular veins, a slight cut bled freely, and the blood under the microscope exhibited a remarkable deficiency of pale corpuscles, the proportion not being more than a fourth of the average in health, or a twentieth of what is common in phthisis. This patient, with better regulated habits, and the use of cod-liver oil and nitro-hydrochloric acid, has rapidly improved. The author observed, that the clergy, being specially exposed to the wear of thought and sympathy, are peculiarly liable to this disordered condition of the blood, their nervous system becoming unduly susceptible, and their minds rendered too easily accessible to the delusions of pseudo-science and quackery. He described the case of a popular clergyman, who without impairment of digestive or muscular power, became affected with sleeplessness and disturbed continuity of thought, the principal physical symptom being jugular murmur. Nitro-hydrochloric acid, cod-liver oil, and subsequently phosphate of iron, with phosphoric acid, were employed with most satisfactory results. Dr. Thompson was disposed to think, that the wear of inordinate and anxious work acted as a succession of shocks through the nervous system on the blood, and he illustrated his views by histories of effects produced by sudden and violent shocks physical and mental, showing that railway collisions occasionally produced results analogous to those depending on intellectual causes, and adducing an instance from the practice of Sir Henry Marsh of death from entire change of the condition of the blood, without any other organic disease, induced by the mental shock occasioned in a young lady by having accidentally administered poison to her father. After relating instances illustrative of the exhausting effects of exclusive attention to one object, and remarking on the varying phenomena resulting from differences of temperament, or from association with indigestion and other collaterial ailments, the author proceeded to show, that in addition to measures directed to regulation of the mental habits, medicines calculated to enrich the blood were most important auxiliaries, and that oils could often be employed when chalybeates proved too exciting. The class of cases referred to pointed to the conclusion, that over-work of the brain may often occasion deterioration of the blood before the condition of other organs disturbs the brain.—*Lancet, Dec.* 15, 1856, *p.* 651.

11.—ON THE TREATMENT OF NEURALGIA BY THE VALERIANATE OF AMMONIA.

By Dr. Declat.

Dr. Declat has warmly recommended the valerianate of ammonia in the treatment of neuralgia, and quotes the following very remarkable case in proof of its efficacy in that disease. A lady had been affected ever since six years of age with a most severe facial neuralgia. The pain first appeared on the occasion of cutting a wisdom tooth; the tooth was extracted, but without any relief of the neuralgia. All the ordinary means were tried in succession: internally, sulphate of quinine, opium, belladonna, sulphate of strychnia, iron, gold, &c.; externally, opium fomentations, blisters, morphia, chloroform, collodion, aconitine, &c. M. Jobert de Lamballe performed cauterization with a red-hot iron in the course of the inferior maxillary nerve. This treatment diminished a little the acuteness of the pains, without making them disappear: and, although suffering less, the patient could neither eat nor speak. She was obliged for at least six months to have recourse to nutritive injections and tonic baths to support her health and her life. She was afterwards ordered to take twelve drops of a diluted Fowler's solution of arsenic three times a-day, and this treatment was followed by a little improvement; but the tongue became red, and the stomach painful, and on continuing the medicine at the urgent request of the patient, there were vomiting, diarrhœa, cramps in the stomach, and a return of the neuralgic pains. The arsenious course was then discontinued, and the valerianate of ammonia was ordered. On the 3rd of January, 1856, a teaspoonful taken in the evening rendered the night endurable; two spoonfuls the next day procured relief. On the 6th of January, the patient was able to go out and to converse; on the 19th she opened her mouth and began to eat. The dose of the remedy was successively raised to a dessert spoonful night and morning; the improvement was so great that the countenance assumed a totally different appearance, and the appetite returned. At last, on the 6th of May, the pains having completely ceased for several days, the use of the medicine was discontinued. From time to time some twinges of pain occurred, but each time the valerianate caused them to disappear, and Dr. Declat believes that there is no reason why the remedy should lose its efficacy in case of relapse.

In a subsequent communication, Dr. Declat has stated that the valerianate of ammonia which he employs is a brown liquid, not very limpid, of a disagreeable taste, and smelling strongly of the peculiar odour of valerian; of this liquid he employs a teaspoonful for a dose in continued neuralgia and hysteria; but he gives two or even three teaspoonfuls in paroxysmal neuralgia, at the period of pain. Dr. Declat was first induced to try the curative effects of the valerianate of ammonia by observing the benefit which he experienced himself from its use when he was suffering from frequent headaches resulting from a severe attack of meningitis. It produced in himself the sedative effect of opium without the cerebral inconveniences which the latter drug always induced.

It should be mentioned, that the composition and properties of valerianate of ammonia are not yet accurately ascertained, and that different specimens obtained from a variety of sources are far from being uniform. It is therefore necessary that some standard preparation should be established before this remedy can be brought into general use.—*Brit. and For. Med.-Chir. Review, Jan.* 1857, *p.* 261.

12.—*Stammering, the Cause and Cure.* By the Rev. W. W. Cazalet, A.M. Cantab.—[With regard to the cause of stammering we cannot do better than quote Mr. Cazalet's own statement.]

"The organs of speech may be divided into two parts—viz., those of sound, and those of articulation, the lungs forming the motive power in the production of sound, upon which, when produced, articulation acts. In the case of a person speaking properly, these elements of speech ought to meet at a certain point, the rima or opening in the larynx, and there combine to form articulate sound or speech. This is the natural action and condition of speaking. In stammering, the breath is stopped in its passage from the lungs by the forced efforts made to articulate. No sound can therefore be produced, every effort tending more and more to prevent the emission of sound and speech thus held in suspense. The difficulty increases with the exertion made; for as during these convulsions no sound can be produced, there is nothing for the articulation to act upon, and it is only when partial exhaustion takes place, and the articulating efforts relax, that the unhappy sufferer is at length enabled to speak. Having thus forced the organs into speech, in the anxiety to continue speaking as long as the power lasts, the lungs become exhausted of air, thus producing a collapse. In this state, the mere action of inhalation, during which the stammerer generally endeavours to articulate, is the proximate cause of succeeding spasmodic efforts."

In the cure of this defect, Mr. Cazalet proposes three principal remedial means, premising that reading is of course always to be resorted to. The first point is the attack of the sound—that is, "of placing the articulating organs in such a position as to modify the sound in the manner required." The second point is the management of the breath; and the third the pitch of voice.—*Lancet, March* 7, 1857, *p.* 246.

13.—*Treatment of Chorea.* By Thos. L. Monahan, Esq., Physician to the Dublin North Union Hospital.—In the 'Hospital Gazette' of December 1st, 1855, I published a case of the above disease treated and cured by the application of splints, &c. On the 19th of December, 1856, I was requested to see Master S., aged 13, who for the last two or three days was suffering from involuntary and tremulous motions of almost all the voluntary muscles. The parents being greatly alarmed, a consultation was agreed upon. With considerable difficulty the boy was taken to Dr. Stokes. He and I arranged that the usual anti-choreic medicines should be tried; in addition, the patient had the benefit of country air and tepid shower-baths. The remedies recommended were regularly administered for over three weeks, by an experienced nurse, without any amelioration of symptoms. I then had recourse to splints: the night they were applied the boy slept well; and on their removal in the morning, there was scarcely any involuntary motion of the muscles observed. By using the splints for a few days and nights, the boy was restored to convalescence. The relief obtained by their use was so sudden and striking, that neither the parents or patient could be induced altogether to dispense with them, lest the disease should return. The above are the only cases of chorea in which I have used splints; they proving efficacious, after the failure of the usual remedies, induced me to report this case.—*Dublin Hosp. Gazette, Feb.* 15, 1857, *p.* 55.

14.—*Chloroform in Toothache.*—M. Simon recommends, as a most effectual palliative of the pain of toothache, whether dependent upon caries or not, the application of cotton, on which a few drops of chloroform have been dropped, to the commencement of the meatus auditorius, where it only causes a slight burning sensation, and gives great relief. The chloroform must not be dropped directly into the ear.—*Revue Médicale,* October, 1856.—*Med. Times and Gazette, Nov.* 22, 1856, *p.* 528.

DISEASES OF THE ORGANS OF RESPIRATION.

15.—ON THE PATHOLOGY AND TREATMENT OF CATARRH.

By Dr. Hyde Salter, Lecturer on Physiology and Pathology at Charing Cross Hospital.

[Catarrh, or what is commonly called a cold, is beyond comparison the most frequent of all affections in climates where there is considerable variation of temperature. Though occasionally very severe, especially in an epidemic form, yet ordinarily the affection is so trivial that it is lightly treated or disregarded. It is, however, apart from this, an affection possessed of great intrinsic interest.]

What I shall endeavour to show you is this—that the symptoms of catarrh depend on a specific animal poison; that they are attributable either to the material presence of this poison circulating in the blood, or to the irritation which it produces in those organs which are its constituted eliminants. I believe that the arrest of the function of the skin, from exposure to cold, throws back into the circulation that which ought to have been eliminated as the cutaneous excretion; that this, either by itself, or by ulterior changes which it gives rise to in the blood, induces a condition of toxæmia; that the vicarious emunctory for the correction of this state of blood-poison, by the elimination of the material for whose excretion the skin has been temporarily rendered unequal by cold, is the respiratory mucous membrane; that the principal local symptoms—coryza, tonsillitis, bronchitis—depend upon the vascular changes in this membrane induced by this exceptional excretory function, and possibly by the irritation of the poison materially present thereat; that as long as the blood is thus contaminated the fever symptoms persist, and that its depuration is immediately attended by their abatement.

Now, what warrant does the clinical history of catarrh give for such an interpretation? I think it warrants it in two ways—on *physiological* grounds and on *pathological*, and I will now proceed to show you how.

The physiological argument rests upon the following postulates, which are capable of complete demonstration:—

1. That the vigour of the secreting function and the amount of its results are affected by the quantity of blood supplied to the secreting organ.

2. That cold is an agent that exsanguines organs to which it is applied, and depresses their circulation.

3. That the skin is a great superficial gland, constantly carrying on an active secretion, and peculiarly amenable to the influence of cold.

4. That that which ought to be, and is not, eliminated, becomes, by being thrown back upon the circulation, tantamount to something introduced from without, and is a virtual poison.

Grant these postulates, and the theory of catarrh which I have above enunciated follows as an inevitable conclusion.

The pathological argument rests partly on the *clinical history* of catarrh, and partly on *analogical grounds.*

1. The clinical history of catarrh I think, clearly suggestr such a pathology as I have propounded. To take one of its commonest incidents:—A men gets wet feet to-day and shivers; he goes to bed, and to-morrow he wakes with a sore throat, and can hardly swallow; he knows beforehand that such will be the case, and it is: (in persons liable to quinsy the throat affection is always preceded by a recognised exposure to cold, which they fear accordingly.) Now, how can these symptoms, the wet feet one day and the sort throat or chest the next, be connected except by the links which the theory I have suggested supplies—by the suppressed cutaneous action, the consequential blood contamination, its vicarious depuration by certain parts of the respiratory mucous membrane, and the inflammation of these parts from the presence of the morbid material in them. The parts—the feet and throat—are at the opposite ends of the body; they are not physiologically connected, and pathologically only in the way that I have mentioned.

2. The analogical grounds with which pathology furnishes us, for such an interpretation of catarrh as I have suggested to you are—

a. That the symptoms of catarrh are of exactly the same *kind* as those of acknowledged blood-poison diseases.

b. That other diseases show us that where the depressed action of one organ has contaminated the blood, the contaminating material is eliminated by another.

The symptoms of diseases depending on specific blood-poisoning, such as typhus, scarlatina, measles, are of two kinds—*general*, depending on the impression made upon the nervous system by the poison, and *local*, from the irritation, inflammation, or whatever it may be, of the excretory organs, set up by the material presence of the poison they are attracting to themselves, and draughting away. Now the symptoms of catarrh are just such. The *general* symptoms—the the malaise, the lassitude, the anorexia, the general aching, the enfeebled and quickened circulation, the subsequent reaction, &c., are those of fever. And catarrh *is* a fever. And there is one fever to whose initiatory symptoms the general symptoms of catarrh bear a special and a very close resemblance, and that is *typhus*. And this is a point to which I would direct your particular attention, for it is one to which I have never seen or heard any reference, and one of great practical importance; for the alternative of the two cases is, as far as prognosis goes, so widely divergent,—the one disease a bagatelle, the other full of danger,—and consequently the discredit you would incur with the uninitiated and undiscerning in case of mistake is so great, that you cannot have it too clearly impressed on your minds. I know of no two conditions more easily confounded than the early symptoms of fever and severe febrile catarrh; I believe they are sometimes, for a day or two, actually not to be distinguished. Very lately I pronounced a case, in private practice, to be a mere rheum from exposure to cold, which in a few days turned out to be typhus, and several cases I have thought to be incipient fever that have turned out mere catarrh; one such case, and a very striking one, I shall relate to you presently when speaking of another point—the diagnostic value of the *labial herpes*. I do not mean to say that most or a large proportion of cases of catarrh are capable of being confounded with the initiatory symptoms of fever, but that many are, and especially those cases in which the general symptoms are strongly marked, and the local but slightly. Indeed, it is in the general symptoms—that peculiar condition of the nervous and vascular systems—the headache, lassitude, aching, want of appetite, thirst, loaded tongue, pallor, quickened and feeble pulse, drooping eyelids, &c.—that the resemblance to fever exists. But the analogy of the symptoms of catarrh to those of undoubted blood-poison diseases, is further borne out by the *local* symptoms, which, as in the case of all specific-poison fevers, are situated in organs possessing an excretory structure and function, and therefore capable of acting as emunctories. The respiratory and faucial mucous membranes are the chief seats of local mischief; their inflammation is accompanied and followed by an increase of their secretion, and a remission of the general symptoms.

But, you will tell me, there is one link deficient in my chain of analogies that binds catarrh to the fevers depending on specific poisons. "Where," you will ask me, "is the eruption, where is the representative of that cardinal symptom of the poison fevers?" I reply, "In *herpes labialis.*" I believe this to be the specific eruption of catarrh. I have never seen a case of it (and I have very carefully looked out for it for several years) which has not been preceded by catarrhal symptoms: I know numbers of people, and I myself am an instance, who never have catarrh without it; I do not say never have coryza or a little cold in the head, but never have regular catarrh, attended with feverish symptoms, without the attack being wound up by the appearance of a crop of herpes labialis. This is generally recognised; the public know it well enough; and the appearance of the eruption is always recognised with the exclamation, "Dear me, what a *cold* you have got!" It is a well-known fact that it is very common in pneumonia, but, as far as I have seen, those cases of pneumonia in which it occurs are always of catarrhal origin, inflammation of the parenchyma of the lungs being a not uncommon complication of catarrh—the most common, in fact, next to that of the faucial and respiratory mucous membranes. I do not mean to say that herpes labialis as certainly accompanies catarrh as the eruption of small-pox and scarlatina do those fevers respectively; many people, doubtless, never have it; but I believe that a great number always do, and that though its absence is not *negatively* conclusive, its presence is *positively*, that its appearance is diagnostic. You all of you know how constantly I am calling your attention to it, and how invariably correct a diagnosis based on it is. I have had several cases lately, of the nature of which I did not feel certain, decided by the eruption of a crop of the characteristic vesicles around the mouth: one of these cases I will relate to you.

On April 19th, 1855, a boy was brought to me amongst the out-patients, hardly able to support himself from extreme debility, pallid, with a glazed feverish eye and drooping lid, a quick but hardly perceptible pulse, dry parched lips, and a loaded tongue, complaining of intense headache, lassitude, pain in his back, and great thirst; he had been suffering in this way for three days. The case had so much the physiognomy of fever, that, thinking it would turn out to be such, I ordered the boy to be admitted. I found out afterwards that the patient had come to the hospital the day before, and that my colleague, with the same suspicions, had recommended his admision, but the boy had refused to come in. At my recommendation, however, he consented to do so; was put to bed, and given some saline mixture combined with volatile stimulants. The next morning, happening to be at the hospital early, I went into the ward where my patient was, and on approaching his bed, while yet several yards distant, recognised on the boy's lips and chin the most luxuriant crop of herpes that I had ever seen. I said to myself at once, "That boy is all right: that is a case of catarrh;" and on coming up to his bed and examining him, I found that all his symptoms had vanished. His skin was cool; pulse about 75, full and soft; he had perspired profusely, and slept well; his tongue was already cleaning rapidly; his headache had vanished; his expression was cheerful; his thirst had gone; and he expressed a wish to get up. That day he left the hospital.

Only a few days since, a case under my observation, in which, from the severity of the sore throat, and from a flush about the face, hands, and arms, amounting in the hands and wrists to a rash, suspicion of scarlatina was excited in the mind of the physician who saw the case. The patient, however, who was himself a medical man, and had frequently had such attacks before, said he knew it was only severe catarrh, and that within forty-eight hours the *herpes* would appear on his lips. He was right; within the given time it did appear, and dispelled all doubt as to the nature of the attack.

But I need not multiply examples. You may see cases almost any day in the physicians' out-patient room; and you yourselves, and my colleagues even, have lately furnished examples of this catarrhal herpes, to which I have directed the attention of some of you. You will only have to look out for it to see how very common it is, and how constantly, when it occurs, it is associated with symptoms of cold.

Together with the vesicles upon the lip, there commonly, almost constantly, occurs a little ulcer or two on the tongue, one generally being at the very tip. These ulcers are herpes, only occurring on the mucous membrane instead of the skin. Each of them has been the seat of an herpetic vesicle, and if you catch them early, you may see the little vesicle before it breaks. It seems to be the law of herpes, and one can easily understand it, that whereas when it occurs on the skin it terminates in a sort of clear, honey-like crust *(h. labialis* and *zoster,)* when it occurs on mucous membrane it terminates in ulcer, *(h. preputialis,)* the epithelium is destroyed by the vesicle, a raw surface is left, and the exudation, which on the skin dries and becomes protective, on the mucous membrane is kept moist and removed with the secretion of the part, so that the denuded portion remains open and unprotected. I have often surprised patients who have had catarrh, with herpes on their lip, by telling them that they have an ulcer on the tip of their tongue; they commonly have; but telling them of it without having seen it seems to them like conjuration, and they cannot make it out. I have sometimes seen, in cases of catarrh, the characteristic ulcers on the tongue, with none of the eruption on the lip—the herpes has fallen on the mucous membrane exclusively—but this is not common.

The conclusions that I have come to with regard to this eruption are—

That it is probably always symptomatic of catarrh.

That those persons who ever have it with catarrh always do with every genuine attack.

That some persons never have it; that its presence, therefore, is positively, but its absence not negatively diagnostic.

That its favourite seat is the debatable ground between lip and skin,—the edge of the lip, generally the lower, and near the middle; but that it frequently occurs on the tongue.

That its usual time of appearance is on the fourth day.

That it is always attended with a remission of the general symptoms.

That the exuberance of the crop of vesicles bears no relation to the severity of the attack of catarrh.

[In the *treatment* of catarrh *diaphoresis* is the safest, most efficient, and rational plan, to relieve the other eliminating surface—the respiratory mucous membrane. The principal diaphoretics are exercise, external warm-diluents, opium, and diaphoretic medicines.]

The efficacy of *exercise*, sufficiently violent to produce profuse perspiration, is well known. "Walking off a cold" is an old remedy. It should, of course, be taken at once, and I think the best way is this: Let the patient drink freely of some warm fluid, put on a great coat, or some amount of clothing that for the season is excessive; then let him start off and walk smartly, and turn homeward the moment he feels himself perspiring; let him continue the rapidity of his pace quite up to his own door, and let him have a bed to get into the moment he gets home. On this plan I have often seen, and experienced myself, unmistakable symptoms of cold at once put to flight.

External warmth is a very effectual, perhaps the most effectual, treatment of all, if properly applied. The foot-bath, the general warm bath, the hot bed, the removal of the sheets, the double amount of blankets, are all forms of it. But the hot-air bath is, I think, the best of all; indeed, I think it is the most potent sudorific that we possess, and is, besides, easily borne without depression, and manageable and convenient, especially if there is gas in the house. All that is wanted is a spirit or gas-lamp, and a roomy cloak, fastened close at the neck, of some air-tight material. Some persons always go out to take a hot-air bath, but it is much better to take it at home, and so avoid exposure to cold after it. I have lately heard of a distinguished member of our profession, who always meets the first appearance of a cold by a visit to a hot-air bath, and always, I believe, with success.

Diluents (they should always be hot or warm) are of great value, but I think they should be used only as helps, with other treatment, the efficacy of which they greatly increase. Weak gruel, barley-water, milk-and-water, weak negus, are the best: the two essential points are, that they should be copious and warm.

Opium is, of all drugs, I think, the best. For cutting short the rigors and relieving the depression of the circulation which ushers in the attack there is nothing like it. I have often tried other means and failed—external warmth, exercise, hot and strong drinks, without getting over the collapsed, shrivelled, shrammed state; but it has at once yielded to opium. But the good of opium does not stop with the mere stimulation, it is an excellent diaphoretic, in some persons a most powerful one, and I believe its chief efficacy in catarrh is due to its sudorific action. To some persons, it is a specific—they feel a cold coming on, they take ten grains of Dover's powder, and the next morning they are sure to be well. But it is a medicine that some persons cannot take, and that in some has effects that very much impair the good it does: in some persons it produces wakefulness and restlessness, in some, severe headache, in some vomiting, in some great depression—the reaction of the stimulation it at first produces.

Lastly, great relief may be obtained by the administration of the ordinary diaphoretics of the stimulant kind, such as ammonia, ether, ammoniacal salts, camphor. (I have seen such good results from camphor as to make me almost think that its effects are specific. I know some patients who always take for a cold, a few drops of spirit of camphor on a piece of sugar every four hours or so, and they profess its effects to be astonishing.) I generally give some such draught as this: —Aromatic spirit of ammonia, twenty-five minims; spirit of chloric ether, ten minims; solution of acetate of ammonia, two drachms; spirit of camphor, five minims: in an ounce and a half of water, every four hours, sometimes with the addition of a little chlorate of potass. Great good often follows such treatment: the rigors cease; or, if the fever is in a later stage, the dry hot skin becomes soft and moist, the pulse comes down, the headache vanishes, and the lumbar pains and aching tenderness of the limbs are mitigated. I do not, however, know that by this treatment I have ever seen a cold cut short: I do not think I have ever seen it given early enough. In hospital patients one has no chance of treating early catarrh; they never come till they have had it some days.

Sometimes, without any appreciable diaphoresis being produced, I have known stimulant treatment stop a cold at once. I have certainly known a good dinner, with plenty of wine, do this.

What I should consider the best treatment, then, if called to treat a cold early, would be, to administer a hot-air bath at once, to follow it up by plenty of warm diluents, and such a draught as I have mentioned, every four hours, uniting with the first dose a little opium, and I do not think that we can give anything better than Dover's powder. I would just add, that I do think that diuresis is advantageous as an adjuvant, and that in this way the poor are not wrong in ascribing the efficacy they do to nitre.

If, then, any of the foregoing opinions are true, how absurd is that treatment suggested by a high authority, which would attempt to cure a cold by a total abstinence from all liquids, and by starving out the defluxion by cutting off the supplies. The natural means of outdraught are thus stopped, and the morbid material shut up in the body. Not only is Nature not assisted, but is even debarred from the exercise of her natural *vis medicatrix.—Lancet, Jan.* 3, 1857, *p.* 1.

16.—NEW INSTRUMENT FOR MEASURING THE EXPANSION OF THE CHEST IN RESPIRATION.

By G. Nelson Edwards, M.B., Assistant-Physician to the City of London Hospital for Diseases of the Chest.

[Many instruments have at various times been devised for taking the admeasurements of the chest, among which may be mentioned those of Dr. Sibson and Dr. Quain, but these are too complicated for general use. The instrument which Dr. Edwards has had constructed is described as follows:—]

It differs from the ordinary caliber or caliper compasses in having the two legs continued beyond the joint in two flat pieces of metal, which move parallel to each other as the compass is opened or shut. One of these flat pieces is cut into the segment of a circle whose centre is that of the compass joint, its outer circular edge being cut at regular intervals into small equal teeth ; these teeth work, as the instrument is opened or shut, on a small pinion wheel, whose axis is perpendicular to the flat piece of metal terminating the other leg. works in it, and turns a small index needle parallel to the plate in which the axis of the pinion works. By this arrangement, when the extremities of the feet of the calipers are kept applied to any two points whose distances from each other vary, this variation and the proportionate one described by the indented circular arc is indicated by the motion of the index needle over the dial-plate. Such dimensions are chosen for the circular arc, its teeth, and those of the pinion, that a difference of two inches between the extremities of the feet of the calipers causes a complete revolution of the index needle. Variations of less than the twenty-fifth part of an inch are thus rendered apparent and easily measured. For greater variations than two inches a piece removed from the dial-plate with an index in its upper part exposes a graduated scale on the surface of the indented circular arc, which marks any greater deviation than that which produces a complete revolution of the index needle of the circular dial. A spring of vulcanized india rubber attached to each foot of the instrument at equal distances from the compass joint, assists in keeping the extremities of the feet in contact with the points whose variation in distance is to be measured.

The lower half of each leg of the calipers slides into the other half, so that, when it is found more convenient for use, the length of the feet may be reduced one-half ; when so shortened, the indications of the dial-plate are diminished in value in the same proportion.

In using the instrument, the extremities having been applied to the two points between which it is desired to ascertain the variation, it is to be supported lightly by the hand, and, the point at which the index stands on the dial-plate having been accurately read off, the patient is to be directed to take a full inspiration, and to hold his breath for a moment. The distance between the point at which the index now stands on the dial-plate and that observed on the former reading will give the amount of variation between the two points in full expansion. On expiration, by means of the india-rubber spring, the index will return to the point where it stood when first observed.

It would be superfluous for me to dilate upon the advantages of instruments for measuring the expansion of the chest in respiration, as this has been so well done by others; but I believe that in many cases of disease they may form an important aid to diagnosis, and if by a long series of observations, we could ascertain the normal amount of expansion of the healthy chest at its several points, such instruments would be useful in ascertaining the value of lives proposed for insurance, as well as in scientific inquiries.—*Med. Times and Gazette, Dec.* 27, 1856, *p.* 640.

17.—TREATMENT OF PERTUSSIS BY DILUTE NITRIC ACID.

By Dr. Young, Holywood.

[As to the nature of this disease Dr. Young entirely agrees with Dr. Todd, who considers it to depend upon some peculiar irritation of the vagus nerve, which will run a certain course, and can be communicated from one person to another by the influence of some poison producing its local manifestation on the vagus nerve and inducing a morbid state of the whole blood.]

Hooping cough seldom attacks *very young* infants, yet I have seen a child three weeks old ill with it, and escaping too, when another child of the same family died. But I am not equal to Dr. Watson in experience of this kind, who says in his lecture, that a woman came under his notice who, while in the last week of her pregnancy, lived in a house where the disease was prevalent, and whose infant hooped the very day it was born. It is also rare in advanced life, though Dr. Todd has seen it in an old couple of 80 and 72 respectively, who did well and got safely over it; and a friend of mine recently informed me of a case occurring in an old gentleman of 75, who when taking his daily exercise, used to astonish the public by running to a lamp-post when the fit came on, and holding tight till the attack had subsided.

As to the average duration of hooping cough, Dr. West, a high authority in diseases of children, says, that out of twenty-five cases watched from the time the cough first assumed a paroxysmal character, until the final cessation of all cough, he should be disposed to estimate the average duration of hooping cough to be ten weeks; two for the first stage, four for the second, and four for the third.

Since the commencement of the present epidemic of hooping cough in my neighbourhood, I have had abundant opportunities of putting the new treatment to the test. I have notes of cases in all stages, and they were all cured in less than a month. In the cases treated from the commencement of the attack, before the characteristic hoop was heard, I found that the acid reduced the violence of the paroxysm to a minimum, if I may so speak. In one of these cases, unless I had heard the hoop, I might have supposed I was dealing with a simple bronchitis, although I am aware pertussis, like scarlatina or rubeola, may run its course without the presence of some of the important symptoms which usually mark the disease. Of one case I may give a few particulars. A gentleman's child, aged 9 years, coughed mildly for a week, and not being supposed to have anything but a common cold, got merely a little simple pectoral mixture. At the beginning of the second week it was evident she had hooping cough, and I then prescribed the nitric acid. I gradually increased the dose from five minims every third hour to fifteen minims every second hour, of the dilute acid. Here the disease was divided into three distinct stages, each stage occupying about a week; the first week catarrhal, the second spasmodic, and the third the period of decline. By the end of the third week the disease had entirely disappeared, with the exception of an isolated cough now and then for two or three days. I need hardly add that in this case, and in every other, where practicable, I employed every adjuvant that I considered useful, such as regulation of temperature, bowels, diet, and clothing; and strict confinement to bed when the cough was at the worst gave very decided relief.

From having had charge of a Poor House where hooping cough was prevalent some years ago, I took a great interest in this hitherto intractable disorder, and used varied and numerous methods of treatment, viz.—prussic acid, counter-irritants, laurel water, touching the pharynx with a solution of lunar caustic; alum as recommended by the late eminent Dr. Golding Bird, for checking the copious secretion from the bronchi, and the cochineal potash mixture, which last, I must confess, I never found to fail in *alleviating* the urgent symptoms. The cochineal is believed to be anodyne, and the carbonate of potash counteracts the supposed tendency to acidity in the stomach and bowels. I have not tried chloroform, as lately recommended and insisted on by Dr. Churchill, but I think that moderate inhalations in conjunction with the nitric acid would be of great service.

The *ratio medendi* of the new remedy, as given by its author, Dr. Arnold, of Montreal, is supposed to be "to introduce the elements of the atmosphere into the blood by the process of gastric digestion, so as to enable the lungs to outstand the stage of temporary asphyxia which is induced during a severe paroxysm." Dr. Gibb believes that an antidote has been discovered in nitric acid. My own view is similar. I believe that nitric acid is almost as effectual a remedy in pertussis, as quinine in ague. The therapeutical properties of the remedy are admirably fitted to counteract the pathological effects of the disease. It is anti-spasmodic in its nature, a powerful tonic, antiseptic in a high degree, and it allays the dyspepsia and the usual tendency to sickness and vomiting. Dr. Gibb says, he has no doubt that its chief use is in supplying the blood with an element, *nitrogen*, which neutralizes the excess of fibrine that exists in the blood in hooping cough.

I shall merely add Dr. Gibb's formula for a child under two:—

Acid nit. dil., ʒxij.; tinct. card. co., ʒiij.; syrup. simpl. ℥iijss.; aquæ, ℥j.

Of this a teaspoonful every hour, or every second hour. Children from two to five, and so on, may take increased quantities. It is of some importance to bear in mind the necessity for a soda gargle immediately after taking the medicine.—*Dub. Hosp. Gaz., Dec.* 15, 1856, *p.* 365.

18.—ON THE SPHYGMOSCOPE OR CARDIOSCOPE.

By Dr. Scott Alison, Physician to the Brompton Hospital for Consumption.

This instrument is constructed upon the same principle as the sphygometer, or pulse-measurer, invented by M. le Docteur Hérrison, an account of which was read some twenty years ago before the Academy of Sciences of Paris. Both instruments consist of a cup filled with fluid, covered at its large extremity with a moveable and flexible material, and communicating at its other extremity with a glass tube. The impulse of the pulse or of the heart drives in the flexible covering, and the fluid is forced up the tube. The new syhygmoscope is made large, to adapt it to the greater size of the heart's apex, and the glass tube is bent up at right angles, to secure the perpendicular position and the return of the fluid by gravitation when the impulse has ceased. When it is desired to view the movement of the sphygmoscope at the same time that the heart's sounds are being heard by the ear placed upon the stethoscope, a piece of india rubber tubing is placed between the cup and the glass tube, by which contrivance the glass tube may be moved to any point convenient for the eye. The small instrument employed to indicate the amount and the time of the impulse of the arteries may be likewise supplied with india rubber tubing. This addition to Dr. Hérrison's instrument is useful for enabling the observer to place different instruments upon distant arteries, and lay their respective glass tubes close together, and thus facilitate the correct observation of their respective movements. The tubing attached to the different instruments is of the same bore, and of the same length.

Fat and very muscular persons impart little movement to the cardioscope; but thin persons, and those whose hearts are irritable or strongly impinge upon the ribs, are very suitable for observation. The heart in phthisical and wasted persons will frequently afford a movement of three or four inches. In some examples of organic disease of the heart. the ascent of the instrument amounts to four inches. Dr.

Alison attaches comparatively little value to the instrument as a mere measurer of the extent of the heart's impulse, as M. Magendie did in respect to the invention of M. Hérrison; for the hand is a sufficiently good test of that movement. It is in affording delicate means of connecting the movements of the heart with its sounds, and of observing the relations of the beat of the heart and the arteries, and of different arteries in different parts of the body, that it is regarded as an instrument of some utility in the investigation of disease.

The relative duration of the systole and the diastole of the heart is shown by this instrument. For the most part, these movements appear to occupy the same time. The ascent of the fluid which indicates the systole is occasionally seen to be slow and deliberate, whilst the descent which represents the diastole is seen to be short and abrupt. In some examples the descent has been observed to consist rather of two successive dips, than of one uniform motion. When the interval between the beats of the heart is unequal, this is well shown by corresponding inequality in the rise and fall. The rise after a long interval is great, after a short one is slight: the fall during a long interval is great, and during a short one is slight. The descent of the instrument continues during the whole time of the interval.

During the ascent of the sphygmoscope, the ear applied to the præcordial region hears the first sound of the heart, and at the commencement of the fall the second sound is heard. Thus we have further confirmatory evidence that the first sound of the heart is due to movements taking place during the systole, and that the second sound proceeds from a movement taking place at the commencement of the diastole. The first sound occupies the whole time of the ascent, the second sound occupies only the first part, perhaps the first half, of the *descent*. When the healthy sounds are replaced by unhealthy, by means of this instrument and the stethoscope it can be ascertained with precision whether they be systolic or diastolic, or both. The systolic endocardial murmur is heard during the whole ascent of the instrument, the diastolic is heard during the descent. In this way, the question whether a murmur be systolic or diastolic—one of not infrequent difficulty to the young physician—is readily answered. It is worthy of notice, that while the healthy second sound occupies only *part* of the time of the descent of the instrument, the diastolic murmur is frequently heard during the *whole* descent. This protracted abnormal sound is due to the passage of the blood back into the heart through diseased valves—the cause of the sound—occurring during the whole diastole, while the cause of the healthy second sound—viz., the flapping back of the valves—is comparatively short and instantaneous, and occurs only at the first part of the heart's diastole.

Double murmurs are heard during both the ascent and the descent of the sphygmoscope. They always vary in tone. Exocardial sounds have their relations with the movements of the heart more satisfactorily made out by means of the sphygmoscope. The "to-and-fro" rubbing sound is heard during the systole and the diastole. One example of exocardial murmur has been confined to the systole, and another has been restricted to the diastole, as denoted by the instrument. The first sound was probably due to the impingement of the roughened heart on the roughened free pericardium; the second was probably due to tension of bands of adhesion, caused by the receding of the heart. In some examples of exocardial bruit, the sound somewhat resembles the endocardial murmur, and much difficulty has been experienced in connexion with them. In cases of such obscurity, it is pleasant and useful to obtain any further information or additional fact, and though at the present moment it may not serve to bring us to a fully satisfactory conclusion, it may do so at a future time, when we more thoroughly understand its value and indications. When we hear a bruit at the region of the heart different in character from what we ever before heard, and such as has not been before described in medical writings, when its locale is somewhat abnormal, and when, in short, the matter is wrapped up in a cloud of obscurity, it is surely something to ascertain for certain that it is synchronous with the contraction of the heart, or synchronous with the recession of that organ from the ribs. In the midst of obscurity and doubt, one such important and undoubted fact may prove a luminous spot to guide our steps—a fixed though small point on which, for the moment, to rest with security. In nearly every example of cardiac bruit which has come under observation, the cardioscope has proved useful, either in declaring what could not be arrived at without it, or in pleasantly and assuringly confirming an opinion formed independently of it.

By means of a cardioscope and the smaller instrument placed upon the radial artery, it has been found that the heart sometimes beats more frequently than the radial artery. Some beats of the heart, though sufficiently strong to affect sensibly the cardioscope, are too weak to produce a pulse-wave at all, or one strong enough at the wrist either to be felt by the finger or to manifest itself upon the small sphygometer. It is generally believed that in many examples of intermittent pulse the heart may beat when the pulse fails to be felt, and that the pulse is not perceived, not because there is no beat or contraction of the heart, but because it is so weak as not to propagate a pulse-wave so far as the wrist. This was shown in a very interesting case of congenital cyanosis, in a young man in whom the pulse was very slow, being only 35 in the minute. The vitality of this person was little pronounced; the surface of the body was chilly to the touch, and even the tongue felt cold. The cardioscope placed over the heart was rapidly and irregularly moved, showing not less than 100 beats in the minute. This patient, whose case is full of interest, is under the care of Dr. Edward Smith.

In examples of transposed and displaced heart, which are not unfrequently observed at this hospital, whether dependent upon the pressure of fluid in the pleuræ, or upon the presence of large cavities in the lungs, the absence of resistance on one side, and increased pressure on the other, from the compensatory increased expansion of the healthy lung, the chief manifestation on the sphygmoscope which has been observed is, a material increase of movement. No retardation of the blood-wave has been noted, but the size of the pulse-wave at the two wrists has differed in some cases. When the heart has been transposed to the right side of the sternum, with the apex beating near the right nipple, the left radial pulse has been found to be larger than the right. The difference has been very obvious, but it has not been found in all cases. The pulse-waves on either side were synchronous. The synchronosity of the radial pulses, and the larger size of the left pulse, were well shown in the case of a girl with the heart transposed to the right, under Dr. Cursham.

In disease the same rule holds as in health in respect to the retardation of the pulse. In health, the small instrument placed upon an artery never rises until the ascent of the cardioscope placed over the heart has been completed; and in disease, no other result has yet been obtained. Whether the pulse be 50 or 100 in a minute, regular or irregular, or whether the arteries be sound or greatly ossified, this is the only and invariable observation. The rise of the small arterial instrument does not take place at the same time as the *rise* in the cardioscope, but during its *fall*. Thus the rise of an instrument placed upon the heart alternates with the rise of an instrument placed upon an artery.

It is in disease likewise as in health that no appreciable interval is found between the beat of an artery near the heart and one distant from it, so far, at least, as is indicated by these instruments; for one placed upon the carotid and another on the dorsal artery of the foot, and each having the india-rubber tube of the same bore and extent, and having their glass tubes placed together, display the contained fluid in motion at the same or apparently the same instant. Thus it happens that the blood-wave travels to the extremities, once it has passed the thorax, without any appreciable loss of time, and that its retardation takes place between the heart and the first arteries upon which we can place the instrument. A slight interval has been suspected in examples of slow pulse with empty arteries. Since it appears that the pulse is not synchronous with the ventricular systole or with the first sound of the heart, the direction given by some writers to regard murmurs occurring with the pulse as systolic is obviously fallacious.

The cardioscope is almost invariably much affected in cases of hypertrophy and of hypertrophy combined with dilatation. But in some cases of hypertrophy in young subjects, the movement of the fluid has been less than might have been expected, from the heart not restricting its force to the soft parts at the intercostal spaces, but so forcibly acting on the ribs as to raise them, and carry the entire instrument, solid cup and all, with them, and thus failing to confine its blow to the moveable cover.

The arterial instrument is moved to a very remarkable extent in cases of aortic regurgitation, when placed upon the subclavian or carotid arteries; and this proceeds from the great variation in the amount of their distension,—now emptying at both extremities, and now filling with an augmented discharge from the ventricle. A great movement likewise takes place when the artery is ossified or has lost its elasticity; for under the ventricular discharge, the vessel is not merely filled, but is lifted.

Aneurisms impart very great movement to the instrument. An ostler (Charles T.), aged sixty, whose life has been, to use his own expression, "only hard work," whose arteries are solid with cretaceous deposit, has an aneurism of the left subclavian artery, about the size of a horse-bean. This little pulsating tumour raises the instrument four inches. A double aortic murmur in this case is very interestingly timed by means of the instrument, aided by the ear. It is believed by Dr. Alison that the instrument may be useful in the discovery of obscure internal aneurisms, but he has not yet had an opportunity of testing it. He recommends the instrument to obstetricians for trial, as a means of ascertaining, in cases of arrested delivery, whether the fœtus be dead or alive. The instrument is to be placed upon the fontanelle. It may be likewise made a stethometer, single or differential, to indicate the relative duration of inspiration and expiration.

Dr. Alison was not aware of the construction of the sphygometer of Dr. Hérrison when he contrived the sphygmoscope. The sphygometer was restricted in its employment by Dr. Hérrison to the pulse, but it will be seen from the above notice that the sphygmoscope has wider applications.—*Lancet, Nov.* 8, 1856, *p.* 510.

19.—*On the Geography of Consumption.*—Mr. Keith Johnston remarks, regarding consumption, that it originates in all latitudes—from the equator, where the mean temperature is 80°, with slight variations, to the higher portion of the temperate zone, where the mean temperature is 40°, with sudden and violent changes. The opinion long entertained, that it is peculiar to cold and humid climates, is founded on error. Far from this being the case, the tables of mortality of the army and navy of this and other countries, as well as those of the civil population, warrant the conclusion that consumption is more prevalent in tropical than in temperate countries. Consumption is rare in the Arctic regions, in Siberia, Iceland, the Faroe Islands, the Orkneys, Shetlands, and Hebrides. And in confirmation of the opinion that it decreases with the decrease of temperature, Fuchs shows, from extensive data, that in Northern Europe it is most prevalent at the level of the sea, and that it decreases with increase of elevation to a certain point. At Marseilles, on the seaboard, the mortality from this cause is tweny-five per cent.; at Oldenburg, eighty feet above the sea, it is thirty per cent.; at Hamburg, forty-eight feet above the sea, it is twenty three per cent.; while at Eschwege, four hundred and ninety-six feet above the sea, is is only twelve per cent. and at Brotterode, eighteen hundred feet above the sea, 0·9 per cent. It is calculated that in the temperate zone, within which nearly all the civilized inhabitants of the globe are located, at least one-tenth of the population die of this malady. It uniformly more fatal in cities than in the country. In England, the excess in cities is equal to twenty-five per cent. The greatest mortality occurs from the age of fifteen to thirty.—*Brit. and For. Med.-Chir. Review, April* 1857, *p.* 315.

20.—THE TREATMENT OF THE ASPHYXIA OF STILL-BORN INFANTS.

By Dr. MARSHALL HALL, F.R.S., &c. (Read before the Harveian Society.)

The newly-born infant and the newly-born of many of the mammalia are in a peculiar condition, both in an anatomical and physiological point of view. The foramen ovale, and the ductus arteriosus, being still open, the blood of the pulmonary circulation is still diverted from the channels it is destined to pursue, and in this respect it resembles the reptile tribes. Respiration, and every stimulus, except temperature, being absent, the excitability of the spinal system, and the irritability of the muscular system, exist in their highest condition, according to a law of animal life which I announced some years ago—viz., that these faculties are, throughout the animal kingdom, inversely as the stimuli. The new-born fœtus is, therefore, a creature of high excitability and irritability. But such an animal bears the absence of stimuli precisely in the same ratio. Respiration is the chief of these stimuli; therefore, to arrive at the subject of this paper, the new-born fœtus can long survive the absence of respiration. The condition of apnœa and of asphyxia, without the absolute loss of life, is therefore of long duration, and the hope of restoring the still-born infant is long protracted; so must, therefore, our efforts at resuscitation be.

These efforts consist—

1st. In measures to induce efficient respiration; and

2ndly. In measures to maintain the circulation.

In order that respiration may be effected, we must adopt the following means:—

1. The infant must be placed in the prone position, in order that all fluids, which might obstruct the entrance into the windpipe, may flow away.

2. Nature's mode of operation being to impress the trifacial and

cutaneous nerves, the external excitors of respiration, by the external cold, we must dash a few drops of cold water on the face and the general surface.

3. We must proceed, having failed to excite respiration, to imitate the respiratory movements:

This must not be done by any forcing means: even the human breath, forced into the infant's lips, may tear the delicate tissue of the fœtal lungs. We must, on the contrary, adopt some measure of drawing the air into the lungs. This is effectually accomplished by first placing the little patient briskly in the prone position, to clear the fauces; then pressing gently on the back; and then removing that pressure, and turning it gently on the side and a little beyond.

4. Meantime, the limbs are to be rubbed, with gentle pressure, upwards, to promote the circulation, by propelling the venous blood towards the heart.

5. At proper intervals, we must again endeavour to excite the respiration physiologically.

The infant is to be placed with the face prone, and douched alternately and rapidly with water of the temperatures of 60° and 100° Fahr. High and low temperatures are equally excitants of the reflex function of respiration, and their power, within physiological limits, is in proportion to the difference of those temperatures. We must remember that the newly-born infant is a creature of high irritability and low stimulus, and that the foramen ovale and ductus arteriosus are open—both events greatly calculated to protract life and hope in the case of apnœa; and we must long, very long persevere in our efforts to save the still-born. The still-born infant has been restored after it has been neglected for hours. There is a remaining consideration. The effect of apnœa is a condition of the blood surcharged with, and poisoned by, carbonic acid; from this condition of the blood a secondary asphyxia and convulsions are apt to occur in the adult. I do not know whether this be the case with the newly-born infant; I trust our worthy President will enlighten us on this and other points in regard to the subject of this paper.

The remedy and preventive of such secondary asphyxia would be, free exposure to the breeze, with the inhalation of very dilute pure ammonia.

The treatment of the still-born infant may finally be thus briefly resumed in the form of Rules.

1. Place the fœtus on the face.
2. Sprinkle the general surface briskly with cold water.
3. Make gentle pressure on the back; remove it, and turn the infant on the side: and again place it prone with pressure.
4. Rub the limbs, with gentle pressure, upwards.
5. Repeat the sprinkling only now, with cold and hot water (of the temperatures of 60° and 100° Fahr.) alternately.

6. Continue these measures, or renew them, from time to time, even for hours. The embers of life may not be entirely extinct!

[Dr. Ramsbotham, the President of the Society, in the discussion which followed, said]

"I have for a great many years endeavoured to explain the primary effort at respiration upon the principle, which is now, indeed, very generally admitted by physiologists, of nervous excitability. Dissection teaches us that the cutaneous nerves communicate most freely with each other, and that a large extent of skin is supplied from the same source as the diaphragm. The phrenic nerve is derived from the second, third, and fourth cervical; and large branches from both the second and third supply the back part of the head, the jaw, neck, shoulders, arm, and the upper part of the back and chest. Thus, then, the diaphragm, and the integuments of the upper part the body, are connected together by the direct sympathy of nervous communication; and any stimulation applied to the extremities of one set of branches supplying the skin, would be propagated to the other extremities of the same nerve ramifying on the diaphragm. Contraction of the diaphragm would result. By that contraction its previous convexity towards the thorax would be destroyed; it would be drawn into the form of an inclined plane; by its descent it would enlarge the cavity of the chest, and thus give an opportunity for the air to rush into the lungs." He then adverted to the beautiful system of the nervous circle subservient to respiration, as laid down by Sir Charles Bell in his work on the nervous system; and stated that Sir Charles corroborated the opinion above given; and had, indeed, proved its accuracy to demonstration, by his discoveries. He has shown that the "internal respiratory" [the phrenic], and the "external respiratory" [the cutaneous branches of the same nerve], are identical at their origin; and that while the "internal respiratory" supplies the diaphragm, the "external respiratory" is expended on the serratus magnus articus, and skin in the neighbourhood; that the other nerves belonging to the same circle ramify over the nostrils, lips, skin, and muscles of the face, root of the tongue, pharynx, and portions of the larynx as well as on the muscles and integuments of the neck. Thus, the same stimulation which would cause the diaphragm to descend, would occasion the upper parietes of the chest to rise; and this would add to the volume of the thoracic cavity. He remarked that these facts would teach us to apply any stimulating means to the upper part of the child's person, The ordinary stimulus of the external air (and that it does produce a stimulating effect, the sharp pain experienced when the dressings are removed from an irritable ulcer plainly indicate) is generally all-sufficient to cause the diaphragm to descend and the serratus anticus to rise; but sometimes stronger stimuli, such as the external use of spirit, is required for the same purpose. The learned author in the paper would lead us to believe that he considered the trifacial nerves to be those which are chiefly impressed; and in this opinion Dr. Carpenter coincides. "That the nerves of the face may have a part in this great work may be perfectly true," said Dr. Ramsbotham; "but that they are not the sole, if the chief agents, I have had many opportunities of satisfying myself; for in cases of breech and footling presentations, or in those that have been made footling by the operation of 'turning' where there has been difficulty in extricating the head from the vagina, I have very many times remarked the child attempt to breathe while the head was completely within the pelvis, when no external air could have been admitted to it, and when it could not have inspired anything beyond the vaginal mucus; but in these cases the chest and arms were fully exposed. This attempt is evidenced by a convulsive action of the diaphragm and abdominal muscles quite perceptible to the operator by his hand; and always indicates that its life is endangered; for so long as the circulation is continued with any vigour through the funis umbilicalis, this effort is not made, respiration not being then required. The suspension of vitality in newly-born infants is chiefly dependent on three causes, either hemorrhage which the mother has suffered, or pressure on the brain during its passage through the pelvis, or pressure on the funis prolapsed, or on the fœtal vessels either in the cord or placenta, owing to long continued compression between the uterine parietes and the child's body; but whatever be the cause, the same means for resuscitation is applicable to them all. If the vessels of the funis are beating after the body is entirely in the world, it is better to delay for a period dividing the cord, provided there be reason to believe that the placenta is not yet dislodged from its uterine attachment; at the same time the child's person may be briskly shaken as it lies on the bed, or two or three smart taps may be made by the hand on its buttocks, chest, or back. This state is especially observed when the head has suffered unusual compression, either in extent or continuance during its birth, when the child is born in a semi-comatose state; this rough handling then rouses the nervous system up to the point necessary for its impressibility by the atmospheric air. If there be no discoverable pulsation in the cord, it should be tied and cut as quickly as possible, that more decisive measures may be taken to restore the ebbing vitality. First the person may be subjected to a little rough usage; then immersed for two or three minutes in a warm bath at the temperature of 96° or 98°. Should no attempt at respiration occur while in the bath, it should be taken out, and successively exposed to the air, then to the warm water, for about fifteen seconds at the time alternately. It is dangerous to keep the child in warm water for any length of time together, if it does not breathe, because Sir A. Carlisle, Haighton, and Dr. W. F. Edwards, of Paris, have proved that animals will drown much more quickly in hot than in cold water. While in the bath a drop or two of spirit may be let fall from the tip of the finger on the root of the tongue, or some spirit may be thrown on the chest and submersion again performed, and this may be repeated two or three times; but if none of these means are efficacious, artificial inspiration must be had recourse to; this should not be delayed more than three or four minutes after the birth. A warm flannel must be laid upon a table, the child placed on it, its surface hastily dried, its body well wrapped up in the flannel, and we must expire from our own lungs into the child's mouth. For the sake of cleanliness, it is as well to put a piece of flannel between our lips and the infant's, and the belly-band being always at hand will answer the purpose well enough. While artificial inspiration is thus being made, the nostrils must be squeezed together by the finger and thumb, the mouth and fingers must then be removed, and the chest compressed by the hand; this alternate action must be continued so long as there is the least tremulous pulsation in the heart, until the child makes a voluntary gasp; this will mostly be the prelude to more perfect respiration. A new-born infant is exceedingly tenacious of life; and we should not be doing our duty if we relaxed our efforts until the heart became perfectly still. Some practitioners recommend the use of the tracheal pipe: the only objection to which is the difficulty of introduction, and its being so much more likely to pass into the œsophagus than the trachea. When the mouth alone is used, some air will certainly pass into the stomach, and perhaps the intestines, as well as the lungs, and the abdomen will become tumid, but not sufficiently so to interfere with the diaphragm's descent." Dr. Ramsbotham had no fear of rupturing the air cells, as the learned author of the paper had. If indeed, as Dr. Snow advises, Read's double action syringe be used, force enough might be employed to damage this fine gossamer texture; but that is not likely to occur if we breathe into the child's mouth. He stated that he had restored multitudes of children by the process he recommends; and would not rely on compressing the chest externally alone, and depending on the resiliency of the ribs. Nor did he agree with the plan of putting the child on its abdomen, to let the fluids it might have inhaled run out of its mouth. The mucus is too tenacious, if any be there, to be got rid of in this way; and is required to be wiped out by the little finger.—*Med. Times and Gazette, Dec.* 13, 1856, *p.* 605.

21.—ON THE RATIONALE OF THE FATAL TENDENCY OF THE WARM BATH IN ASPHYXIA.

By Dr. Marshall Hall, F.R.S., &c.

There is a physiological relation between the circulation and the respiration, any deviation from which, in either direction, is of a fatal tendency.

During the systemic (not the pulmonic) circulation, carbonic acid is formed; in respiration, the oxygen necessary for the formation of this carbonic acid is supplied, and the carbonic acid so formed is evolved from the system.

The immediate baneful effects of the suspension of respiration arise from the privation of oxygen, and from the retention of the carbonic acid previously formed, which becomes a blood-poison.

An animal placed in perfectly *pure nitrogen* or *hydrogen* gas dies in violent convulsions instantly. And this is doubtless owing to the privation of oxygen, for carbonic acid might be exhaled into nitrogen or hydrogen gas.

But an animal dies also in air consisting of such a proportion of *carbonic acid with oxygen* as to prevent the evolution of carbonic acid from the blood, although the quantity of oxygen might be so great that a taper blown out, and burning only as a *spark*, would be instantly kindled into *flame*.

If, without producing effects so sudden as those described, we change the relative proportion of the respiration and the circulation, morbid phenomena are produced special to each case. If the circulation be disproportionately augmented, carbonic acid is formed, and being morbidly retained, slighter convulsion and slower death ensue. If the respiration is unduly and disproportionately augmented, the animal is *cooled;* for mere *pulmonary* respiration is a cooling process, by the difference of temperature of this *in*spired and *ex*pired air ; and in this case also the animal dies, but now from loss of temperature.

This latter is the case in the asphyxiated patient, if the respiratory movements be unduly hastened—that is, disproportionately to the rapidity of the remaining circulation.

On the other hand, if in the asphyxiated we excite the circulation without simultaneously and proportionately inducing the respiratory movements, we destroy our patient by carbonic acid, formed in the course of that circulation, and uneliminated by respiration.

This statement leads me to the proper subject of this paper—the Rationale of the Injurious and Fatal Tendency of the Warm Bath in Asphyxia: for it *is* injurious, and has, I am profoundly convinced, of itself proved fatal in cases in which the patient, without it, would have *spontaneously* recovered.

In such a case, it is surely not less essential to the progress of science and our art to remove error than to establish truth.

Warmth is so obviously a stimulus, and a stimulus is so apparently required for a patient taken out of the cold water in a state of asphyxia, that in recommending the warm bath we seem to be addressing ourselves to the common sense of mankind, and it was a step in advance to entertain a *doubt* on the subject.

But when we begin to experiment—when we learn that an animal deprived of respiration by being submerged under water, *lives longer* in *cool* water than in *warm* water, we learn to consider whether, in fact, coolness is not more favourable to life in the asphyxiated from submersion, than warmth. We recall to mind, too, that animals bear the abstraction of respiration in proportion to their coolness: the hybernant animals and the batrachian tribes will scarcely drown at all. If a kitten be first cooled, or if it be immersed in cool water, it will not drown so soon as it would do if submerged at its ordinary temperature in water of the same temperature—facts established by Edwards, by M. Brown-Séquard, and myself, and witnessed by the secretary of the Royal Humane Society, and by its superintendent, in Hyde-park.

Thus experiment is made to correct preconceived ideas, however apparently consonant with common sense.

There are other facts which point to other modes of treatment of the drowned, which the administration of the warm bath necessarily excludes. If a poor creature be perishing for want of food, we cautiously administer food. If a man be, in like manner, perishing for want of air, should we not administer air? Is this not simple and reasonable? And in the case of drowning, is not the want of air the first condition to which we should bring succour, and the want of temperature the second or third? And should we not first administer to the first want? Then in the case of drowning, we should administer air first and warmth in the second place. But may not the warmth administered without air, do great and absolute injury? It raises the temperature, and in so doing augments the necessity of respiration to life.

In the *first* place, if *any* effect be produced by the warm-bath, the circulation is accelerated. But to accelerate the circulation without inducing, at the same time, efficient respiration, is to augment the formation of carbonic acid—the *blood poison*,—without its elimination from the system, and it induces, consequently, a fatal result;

Secondly, all *excited* respiration through the medium of the cutaneous excitor nerves is excluded, the uniform temperature of the warm-bath excluding the excitants of those nerves arising from the *alternate* application of *heat* and *cold* to the surface;

And *thirdly*, *imitated* respiration is excluded by the very sustained position of the patient, excluding, as it does, alternate pronation and rotation, and pressure applied and removed, or changes of position and compression, which induce respiratory movements.

So that the warm bath is not only positively injurious by *poisoning*, but negatively, by excluding the de-poisoning process.

Lastly, the warm bath excludes those frictions of the limbs upwards, with pressure, which really constitute the most effectual means of promoting the circulation and warmth.

Nor is it unimportant to save the *time* expended in preparing the warm bath, or in carrying the patient to it.

And it is scarcely a minor point to direct *all our thoughts and energies*, undiverted, to *the* important remedies exclusively.

In conclusion, the warm bath is of *doubly fatal tendency*: it is so in itself positively ; and it is so negatively, by excluding every real remedy.

All have heard of the *Grotto del Cane.* The poor dog is put into the carbonic acid, and taken out asphyxiated. It is plunged—not into a *warm bath*—but into the water of the adjoining *lago* Aguano, and taken out—restored !—*Lancet, Dec.* 20, 1856, *p.* 685.

22.—THE DANGER OF ALL ATTEMPTS AT ARTIFICIAL RESPIRATION, EXCEPT IN THE PRONE POSITION.

By Dr. Marshall Hall, F.R.S., &c.

I have shown, in a previous paper, not the inutility only, but the *danger* of the *warm bath* in the treatment of apnœa or asphyxia. I now proceed to demonstrate the danger of all attempts at the induction of artificial respiration—the special remedy against asphyxia,—except in the prone position.

If the asphyxiated patient be moved and placed in the supine position, in which no attempts at artificial respiration can be effectually made, what is the condition of the rima glottidis, or entrance into the windpipe ? Is it *free*, so that air may be pressed or drawn into it ? And if apparently free, does it remain so at the moment when an effort to force or draw air into it is made ?

1. Is the tongue so securely situated, all muscular energy having ceased, as neither to *fall* backwards nor to be *drawn* backwards, and so close or obstruct the orifice and entrance into the windpipe ?

2. Is there no accumulation of mucus, or other animal fluids, or of fluids from regurgitation from the stomach, which may also obstruct the glottis ? nay more, which may be forced or drawn into the windpipe, inducing a *second* and fatal suffocation ?

No one can say, *à priori*, that one, or even both, of these events may not occur. These are not only possible, but probable,—not *only* probable, but inevitable under certain circumstances.

There is one fact of the utmost importance. When, from any circumstances, the nervous and muscular powers are in abeyance, nothing is so common as regurgitation from the stomach, from change of position, compression, &c. Under such circumstances, compression of the sides of the thorax would certainly be apt to produce this effect. Now, in the supine position, the matters so regurgitated would remain in the fauces, obstruct the glottis, or, when the pressure was removed, be drawn into the windpipe. Leroy's mode of attempting to effect artificial respiration, of which a sketch is given by the Royal Humane Society in its Reports, is utterly ineffectual ; but if effectual, would be replete with danger. The only certain safeguard against such a fatal accident is—*the prone position.* In this position, the tongue tends to fall forwards, and all fluids flow from the fauces and the mouth, or are expelled by the first induced expiration.

All this is reasonable, *à priori.* But we must not rest here. Our appeal must be to *facts*, not to mere notions. The facts must be ascertained by careful examination of the dead subject.

1. What *is* the position of the *tongue* when the body has been roughly moved about and laid in the supine position, all cadaveric rigidity of the parts being overcome by previous movement of this organ backwards and forwards?

2. What is the further position of the tongue in the supine position, at the moment of attempted inspiration, first, by means of the bellows, or, secondly, by the removal of the pressure on the ribs or sternum, and the consequent dilatation of the thorax?

These facts may be ascertained by removing the tissues on one side of the neck, so as to give a lateral view of the tongue, glottis, epiglottis, and pharynx, and by replacing them by a portion of transparent glass of the proper size and form, properly placed and carefully maintained in its position.

The first part of this examination has been already made. The subject being placed in the supine position, and the lateral parts of the neck being removed, so as to admit of observing the relative position of the internal organs—the tongue, the epiglottis, the glottis, the pharynx,—it was seen that obstruction to the entrance of air actually *did* take place.

I now propose to place a piece of transparent glass so as accurately to close the cavity and allow of the observation, first, of the effect of *position*, the supine and the prone comparatively, and then of any attempt to induce *inspiration*.

A similar examination of this internal in reference to fluids present in it (and we never can know when such fluids are present) is unnecessary: fluids will gravitate to the lowest parts of a cavity, and will be drawn into an open orifice, such as the glottis, under the influence of air forced or inhaled into it. And such an event not only renders all attempts at *inspiration* nugatory, but induces a permanent because material obstruction of the entrance in the windpipe.

In confirmation of these views I again appeal to experimental *facts*:—

"The following experiment has been repeated *many times*, and has been witnessed by George Webster, jun., Esq., of Dulwich; Mr. Williams, superintendent of the Royal Humane Society, Hyde Park; and other gentlemen:

"The dead subject being placed in the *supine* position, and pressure made on the sternum and ribs, a little gurgling was heard in the throat; but, the pressure being removed, there was *no* evidence of *in*spiration."

Now let us contrast with these abortive attempts to induce artificial *in*spiration in the *supine* position, the beautiful and life-giving results—*in*spiration and *ex*piration—of alternate rotation from the prone position and repronation. I continue the quotation:

"The subject being then turned into the prone position, and pressure being made on the spine and the ribs, and removed as before, there were free expiration and *in*spiration."

Far more marked is the effect of pronation and rotation:

"The subject was turned into the prone position: considerable expiration took place, which was much augmented by pressure of the hands on the back. On removing this pressure a little inspiration took place. The body being then rotated on the right side, considerable inspiration again took place, whilst moving through one-fourth of a circle; on continuing the rotation, inspiration continued until the shoulder was half-way between the lateral position and the table, when it ceased."

These are the *original* experiments. They are extracted from a little pamphlet entitled "Abstract of an investigation into Asphyxia," &c., and now out of print. Those who may wish to pursue this investigation will read with great interest and advantage the experiments and observations made, at my request, at St. George's, by Mr. R. L. Bowles and Mr. Charles Hunter, and communicated to me by the former gentleman, and by me to the 'Lancet.'

I conclude by observing that the principle of *prone respiration* is of such importance as to demand a new designation to impress it on the attention and the memory: I propose to term it PRENOPNŒA.

The number of cases of apnœa and asphyxia, the effects of *chloroform*, which have been rescued by the "Ready Method," and of which I have received authentic details, now amounts to THREE. The last of these was communicated by an eye-witness of the operation, which consisted in tenotomy in a little boy, aged about four, under the influence of the anæsthetic; suddenly the child turned pale and ceased to breathe, and looked as if it were dead. Cold water was dashed on the face, and other ordinary measures were adopted utterly in vain. The Ready Method was now instantly adopted and efficiently applied: after the first inspiration produced by rotation after pronation with pressure, the mouth was observed to open and air to be inspired; the movements were repeated, physiological respiration commenced, the little boy cried, and all was safe.

I conclude the momentous subject by several *aphorisms* in regard to the treatment of asphyxia:—

1. The effects of suspended respiration can only be removed by the renewal of respiration.

2. Artificial respiration can only be certainly, effectually, and safely performed in the PRONE position; for,

3. In the *supine* position the larynx is apt to be obstructed by the falling back of the tongue and epiglottis, or by the accumulation of fluids already in the mouth or regurgitated from the stomach.

4. These fluids may be *fatally* inhaled into the windpipe when *in*spiration is mechanically effected.

5. All other measures are subsidiary, even the rubbing the limbs

with pressure upwards; and all which exclude respiration are, *ipse facto*, destructive; the *warm bath* is of *doubly fatal* tendency,—first, by excluding pronation and rotation, and secondly, by promoting the formation and the circulation of the blood-poison—carbonic acid.—*Lancet, Feb.* 7, 1857, *p.* 134.

23.—ON THE "READY METHOD" IN CASES OF NARCOTIC POISONING, AND OF CHOKING.

By Dr. Marshall Hall, F.R.S., &c.

[In cases of narcotic poisoning—what is to be done if the stomach-pump be not in readiness, and vomiting cannot be induced? In answer to this question Dr. Marshall Hall says—]

There are two stages in narcotic poisoning, in each of which the "Ready Method" is, in the absence of the stomach-pump, our *hope.*

The *first* is, that in which our object is to remove the poison from the stomach by the induction of *vomiting*, but in which, from the degree of narcotism, all ordinary remedies fail.

The *second*, that in which our object and hope are, to continue respiration, *until* the elimination of the poison from the system may be accomplished.

In the former case, the patient should be laid on a table, with the head projecting beyond its edge, if possible; if not, on the floor; and, being placed on the *side*, the finger of one person is to be introduced into the *fauces*, whilst the body is briskly and repeatedly rolled into the *prone* position by another.

If there be the slightest degree ("*scintillula*") of excito-motor power remaining, the *cardia*, already somewhat relaxed perhaps from torpor, will be still further relaxed, physiologically, whilst the *glottis*, the safety-valve of the trachea, is closed, and the *thorax* and *abdomen* being compressed by a force equal to the superincumbent weight of the body, to which further force may be added by means of pressure made along the spine, *mechanical* vomiting will be produced, and the poison expelled.

This desirable effect will be produced in cases in which the narcotic torpor is too great to admit of exciting the very complex act of *physiological* vomiting.

But let us now suppose that the narcotism is too deep for the success of this manœuvre,—that the *second* case is before us. Then our hope consists in continuing respiratory movements until the poison is eliminated from the blood and the general system. In one word, our hope is in the "Ready Method," such as I have recommended it for asphyxia!

I suppose that volition has ceased, and that the patient can no longer be made to move or walk about; that all good physiological respiration has ceased, or is about to cease; then, one hope still remains,—postural respiration,—and the other measures comprised in the "Ready Method in Asphyxia;" and I need not say, how long and perseveringly this method should be continued.

Death in choking, is the result of a diastaltic spasmodic closure of the glottis.

Nothing can be done in this stage of the accident, except, 1, to endeavour, by introducing the finger into the fauces, to induce vomiting; 2, to introduce something *like a bougie* into the œsophagus, (a firm scroll of linen being the readiest;) or, 3, to adopt a measure, which I adopted on an emergency, with immediate success, some years ago.

A little boy, eating some fowl in haste, attempted to swallow too large a morsel, and was choked; I ran to him, placed him between my knees, one knee (the right) pressing firmly on the stomach, the other on the back; I then placed one hand (the left) on the back part of the thorax, whilst I gave a firm blow with the other on the sternum. In an instant I had the joy of seeing the morsel of chicken expelled with force to a considerable distance; and all was safe!

But supposing all these efforts to fail. What is then to be done?

In the midst of the asphyxia induced by the closure of the glottis, the excito-motor power fails, and the larynx is no longer spasmodically closed; and now the "Ready Method" may be adopted, with the effect of sustaining life, until such a bougie is made as shall be effectual in pushing down the morsel of food or other object in the pharynx or œsophagus.

A *firm* scroll of cotton or linen, when imbued with grease, made from a sheet, a window-blind, or curtain, may then be made, not in too great haste, and be boldly passed into the œsophagus.

The morsel of food is generally lodged in the pharynx, or *upper* part of the œsophagus, and, when found lower down, ceases to excite reflex action of the larynx; and breathing is, therefore, possible.

A thin bent tallow-candle, or a piece of firmish *cord*, (taken from the window-frame,) might answer the purpose of the bougie.

The "Ready Method" procures us the *time* necessary for obtaining or preparing *any* of these means, and for giving full directions to the assistants. In performing it, a little brisk movement may be adopted in pronation, and in making dorsal pressure, which may, if not at first, eventually, dislodge the foreign body.

I need scarcely suggest that this last measure should also be enforced in cases of a foreign body inhaled into the larynx both *before* and *after* tracheotomy, with the addition of a firm blow, with the open hand, on the back.—*Lancet, Jan.* 17, 1857, *p.* 58.

24.—*The "Ready Method" in Asphyxia.* By Dr. Legat, South Shields.—[The author, after mentioning the circumstances under which the case was presented to him, says]

On entering the harness-room, I saw stretched *on his back* before a warm fire, partially enveloped in blankets, a muscular-looking young man, surrounded by four or five others, one of whom was supporting his head. The lips and face were blue, the surface quite cold, and the body so rigid that the right hand, which rested over the pubis, and the left arm, bent at right angles over the chest, could not without difficulty be changed from their position. There was no pulse, and no respiration could be detected. A slight quivering was observed throughout the body for an instant, and in this movement seemed the only hope that life might be restored. Exactly an hour had elapsed since he was taken out of the sea, and at that time he spoke a few words. Blankets were taken down to the beach. He was well rubbed. An attempt was made to administer brandy, which it would appear he could not swallow, and he was then carried about four hundred yards to the room where I found him. He had been lying here about half an hour, *during which time he had not spoken*, and for the last ten minutes of it he had been in the condition above described. Those around him told me "they feared it was too late to be of use to him." I felt there was no time to be lost. The window of the room was ordered to be thrown open, and placing my watch on the floor before me, for the purpose of correct observation, I knelt down, and with my right hand on his left shoulder, and my left on the side of his chest, commenced the movements described by Dr. Marshall Hall. He was rolled gently over on his face, (the mouth and nostrils being carefully kept free,) and then back again on his side "and a little beyond" every four or five seconds. About seven minutes had elapsed when I heard more than one of the bystanders say "it was of no use"; but the movements were steadily persevered in, accompanied with occasional slappings with the open hand over the back of the chest, and rubbing of the limbs upwards by two assistants. *In twelve minutes* I first detected indications of returning respiration, and *in six minutes more*, accurately noted, the breathing was natural. I then made him swallow a little brandy, and saw him again in half an hour, before I left, perfectly safe,

Remarks.—Three months have just elapsed since the short but excellent rules, from the able pen of Dr. Marshall Hall, for the restoration of the drowned appeared in 'The Lancet,' and now the second instance of remarkable recovery by their means is recorded. I could conceive no case which could put this new method more severely to the test than the present one. Every attention had been paid to the man from the moment he was removed from the water—warm blankets, continued rubbing of the body, the application of mustard, the administration of brandy, removal to a warm fire, &c.; and yet, notwithstanding all this, instead of getting better, he grew worse, and must inevitably in a few minutes more have been beyond all reach of art. And why? Because his kind and attentive neighbours, although doing their best for him, had been pursuing a plan opposed to his recovery. Three causes evidently operated against the poor man—

1st, the attempt to give brandy, which he could not swallow; 2ndly, the carrying him nearly four hundred yards; and 3rdly, the placing him *upon his back*, all of which, in his enfeebled condition, must have tended to reproduce and prolong the asphyxia. An hour elapsed, postural respiration was tried under this disadvantage, and in eighteen minutes the respiration was free.

[Dr. Legat suggests that this plan would be very advantageous for the purpose of resuscitating patients thrown into a critical condition from the administration of chloroform.]—*Lancet, Nov.* 29, 1856, *p.* 595.

25.—*Asphyxia treated by the "Ready Method."*—In a case of funis presentation, when the child did not come into the world for full half an hour after a loop of the cord was distinctly felt in the vagina, "I commenced the Ready Method, and had persevered twenty minutes, when the old nurse hinted that the only good I was doing was making the child give an unearthly gasp—unearthly certainly it was, and one that I fancied told me, in language not to be mistaken, to desist, and in doing so put my finger in the axilla, when, to my astonishment, I felt the axillary artery pulsating. I again commenced the Ready Method, and in twenty minutes more respiration had fairly commenced, but was rather feeble.

At first the pulse was not perceptible at the wrist; but had I stethoscoped the chest, I should have been able to have spoken with greater certainty. If the action of the heart did not commence till many minutes after birth, which I believe was the case, then, was the heart's action an effect of the artificial respiration? Of this I am certain, that from the time I was called in till the birth, which was fully half an hour, there was not the slightest pulsation in the cord."—

—*Lancet, Feb.* 7, 1857, *p.* 155.

26.—*Asphyxia from Chloroform successfully treated by the Marshall Hall Method.*—On the 28th of January, 1857, I was asked to assist at the operation of tenotomy, in a little boy about four years old. Chloroform was administered, and everything went on well. The operation was concluded; they had ceased giving chloroform, when suddenly the child became perfectly pallid, and apparently lifeless; respiration had ceased. Warm water, cold water, slapping on the face, were had recourse to; none of these *excited* respiration in the least. Pressure on the sides of the chest was tried, the child remaining in the supine position. This attempt to produce *artificial respiration* was no more effectual than the previous efforts to *excite* respiration had been. The child was now quickly placed in the *prone* position; slight pressure was made on the back, then rotation on to the side and a little beyond. A gasping movement of the mouth followed. The pronation and semi-rotation were repeated three or four times, when respiration became distinct; but being still feeble, semi-rotation and pronation were continued a few more times, with much improvement in the respiration. The inhalation of ammonia with a little sprinkling of water were employed; the latter *now* excited inspiration. They were repeated occasionally till the child showed that it had regained the full power of its lungs by crying, and it was then given into the mother's arms.

In this case it may be remarked that the Ready Method was not adopted at the very beginning; it might not have been necessary, and we should not have been able to prove that it was. The case was, however, far otherwise. To the pale and apparently lifeless child various excitants of respiration were applied without effect; also artificial respiration was employed in the *supine* position, by the lateral compression of the thorax. This was not attended by the slightest success. And why? Dr. Marshall Hall has shown that the tongue may fall back, and that fluids may accumulate in the pharynx and obstruct the orifice of the larynx in this position. If the patient is to breathe again, the only remedy is to cause the fluids to flow out, and the tongue to fall forwards; and this, it appears to me, can only be effected by the prone and postural method.

I once saw a patient in one of the London hospitals die under chloroform, before the operation for which it was the preparation could be commenced. In that case, I saw excitants of respiration employed; I saw mechanical attempts made to restore respiration in the supine position, by lateral compression and relaxation of the thorax. Up to this point, the case closely resembles the preceding one. Both failed. Galvanism was applied, and there was nothing else to try. The patient, a woman, died (the Ready Method was not then known). But in the case of the little boy it was known—it was tried—he was saved.

I would only add this: chloroform constantly makes patients sick during and after its administration. Now, whether matters are really *vomited* or not, may it not be that attempts at artificial respiration in the supine position (in asphyxia from chloroform) have sometimes failed because of the obstruction of the larynx and glottis by the regurgitation of fluids from the stomach into the pharynx? May not even the spasmodic cough which occurs be due to irritation from the presence of these "foreign matters?" Is not, therefore, the Ready Method specially indicated in these cases? for how can any position but the prone remove these life-destroying liquids and morsels?

I once attempted to resuscitate a still-born child. I had a hot bath ready, and dipped the infant in and out. I tried other means of inducing respiration, Knowing at that time no better way of effecting this, I applied my mouth to its mouth, whilst it was in the supine position. I inflated the lungs certainly by the force employed; I tried also lateral compression and relaxation of the thorax. Every time I ceased inflating the lungs, thick grumous fluid freely escaped from the mouth. My efforts were useless, and I now believe I blew much fluid with air into the lungs, existing as it did in the pharynx and mouth.

In cases of drowning in still-born infants, in cases where chloroform has caused asphyxia, fluids, more or less tenacious according to circumstances, do, then, obstruct the glottis; and in such cases no attempt to restore respiration, can be effectual till the prone position has removed the obstruction.—*Lancet, Feb.* 7, 1857, *p.* 154.

27.—ON JUGULAR VENESECTION IN ASPHYXIA.

By Dr. John Struthers, F.R.C.S., Lecturer on Anatomy, Edinburgh.

[The author remarks, that the question whether resuscitation from asphyxia can be assisted by jugular venesection, has not received the attention it deserves, from its principle not being generally appreciated, experiments on the subject having alone been performed on the lower animals.]

The practice can be useful chiefly, if not entirely, by regurgitation, on the principle of disgorging the right side of the heart. In asphyxia, the action of the pulmonic heart is arrested by distension, is paralysed by this mechanical cause, which remains, or may remain, notwithstanding artificial respiration, unless relieved by regurgitation.

The experiments of Drs. Reid, Cormack, and Lonsdale, satisfactorily show—1, That in animals—dogs, cats, and rabbits—the right side of the heart may be disgorged by jugular venesection ; and, 2, that the effect of this is to increase the action of the heart when it had become feeble, or to renew it when the action had altogether ceased. The animals in these experiments, had been previously killed, or all but killed, variously, by hanging, by blows on the head, by poisonous doses of hydrocyanic acid, creosote, strychnia, and by injection of air into the veins. The principle of relief is the same in all these circumstances ; whether, as in asphyxia, the heart has been distended by impediment at the lungs, or whether, as in the case of the poisons, it has become engorged during its temporary arrest under the action of the poison ; or whether it has simply become mechanically distended by the air—in all there is the mechanical distension to be got quit of by regurgitation.

In these experiments, it was found, first, that the exposed pulmonic heart, although pricked and scratched with the knife, will not act, but as soon as the auricle, or one of the great veins, is punctured, allowing the blood to escape, the auricle and ventricle become emptied or relaxed, and spontaneously resume their action. Then, by farther experiment it was found that the same object could be accomplished by jugular venesection. For the details of these experiments the reader is referred to the above mentioned papers, especially to that of Dr.

Reid, which, together with masterly articles on asphyxia and on the entrance of air into the veins, may be consulted in his volume of collected papers, ('Physiological, Pathological, and Anatomical Researches.' Edinburgh, 1848.)

Resuscitating means must be founded on a clear understanding of the physiology of asphyxia. We know that, in asphyxia, dark blood at first passes through the lungs, and is circulated in the arteries, as Dr. Reid's experiments show, with undiminished force. And that, as the result of this, under the influence of venous blood, or from want of the stimulus of arterial blood, the functions of the cerebrum, and afterwards those of the medulla oblongata, become suspended. It is for this reason that after only a short immersion in the water, respiration does not recommence although the lungs and air are restored to their natural relation; the brain is poisoned, is unaware of the state of the lungs, and does not perform the respiratory movement. But this consideration need not influence our treatment of asphyxia, farther than reminding us that it is only after continued artificial respiration that a current of arterial blood can be sent to the brain,—that we must therefore persevere with artificial respiration with the view of arterialising the brain, and that when this is accomplished, but not sooner, the natural movements of the chest will commence.

Shortly after the functions of the brain are suspended, the second cessation of the vital actions occurs in the arrest of the pulmonary circulation. The proximate cause of this stagnation is not evident or demonstrable. It is not simply or mechanically due to cessation of the movements of the chest, for these movements have been arrested from the very beginning, and Dr. Alison has shown that in animals confined in nitrogen, and breathing up to the time when they were suddenly killed, the same arrest of the pulmonary circulation takes place. Whether this arrest is due, as Drs. Alison and Reid suppose, to the cessation of the chemical changes, when the supply of oxygen previously in the air cells is at length exhausted, or as Mr. Erichsen and others suppose, to spasm of the capillaries, matters not in a practical point of view. The facts will suit either theory, and the practical consideration is, that before the circulation can be renewed, the respiratory function must be renewed by getting the poisoned air out and fresh air in. The great resuscitating means to which anatomy and physiology point is artificial respiration. This, in the first place, renews the function or chemical changes in the lungs, setting loose and restoring the pulmonary circulation,—second, it at length furnishes a supply of arterial blood for the brain,—and third, it tends to relieve the right side of the heart—the latter in two ways, by removing the obstruction at the pulmonic capillaries, and, as in an ordinary and still more in a forced expiration, as Dr. Reid's experiments show, by mechanically forcing on the blood.

The remaining indication in the treatment of asphyxia, is specially to restore the action of the heart. The stagnation at the lungs produces accumulation of blood in the right side of the heart, distending and at length paralysing it, the action of the heart continuing a short time after respiration has ceased. It may be asked, Why does restoration not quickly follow well performed artificial respiration, after a short immersion? The natural relation between the lungs and the air has been restored, and respiration is going on. All that would seem to be now wanting is the forcing power of the heart to drive the blood onwards; but the pulmonic heart is paralysed by a mechanical cause, which, unless removed by regurgitation, must or may render fruitless all attempts at resuscitation.

In regard to this important indication I infer, from these experiments on the human subject, and from the general view I have presented of this inquiry—1, That it is generally possible to disgorge the right side of the heart by jugular venesection; and 2, That there is every reason to believe that jugular venesection will prove a useful means in resuscitation.

In jugular venesection under other circumstances we make pressure below the opening, and the blood flows from above. This proceeding is to be regarded as a general bloodletting, as in bleeding at the arm, and in addition, as a local bloodletting to the head; as a more direct and rapid means of relieving congestion of the head generally, and pressure on the brain from venous obstruction. In asphyxia, jugular venesection may possibly be useful on this principle also, as well as on the much more important principle of regurgitation; but it is to be borne in mind, as my experiments show, that the blood which comes from above may still be a regurgitating current from the internal jugular, on account of the very free communication which always exists at the upper part of the neck between the various jugular veins of the same side, enabling injections to pass readily from one to the other.

There is one danger attending this procedure—that of entrance of air into the veins. This accident is especially apt to occur at the root of the neck, where the veins do not collapse easily, but are kept open, or "canalised," by their relation to the bones; so that, during the act of inspiration, air is very liable to enter. To leave a wound in the external jugular vein in an open condition during the performance of artificial respiration, would therefore place the patient in very dangerous circumstances. It is, however, evident that air cannot enter as long as the veins are distended or full. The danger then may be obviated by closing the wound as soon as the blood ceases to regurgitate actively. Recollecting that our object is not to empty, but only to relieve the over-distension of the auricle and ventricle, the escape, by regurgitation, of even 1 oz., should afford very material relief. As, however, part comes from above, the safe plan is not to close the wound until the blood ceases to flow actively.

In conclusion let me state precisely what I recommend in regard to jugular venesection.

We know that in the great majority of the drowned, although the body is early recovered from the water, the vital actions have ceased; that means of resuscitation are usually continued for perhaps an hour or more; and that the means commonly had recourse to, after stripping and drying the body, are warmth and friction, and attempts to restore respiration by artificial means, or by galvanism.

I would recommend jugular venesection to be performed *as early as possible;* that the vein should be opened at about an inch above the clavicle; that the veins be simply allowed to disgorge themselves; and as soon as the active flow ceases, not waiting too long, that the wound should be carefully closed, and artificial respiration immediately commenced.

With regard to assisting the regurgitation, I would not be disposed to interfere if the blood came with even moderate freedom. If it did not, it might then be advisable to introduce a probe, or blow-pipe, or instrument like a female catheter, and slip it gently in the direction already mentioned, for about a couple of inches. If this be not succeeded by a regurgitating current, then abandon the procedure, and close the wound. The patient has had all the chance which the surgeon can give of the benefit which I believe jugular venesection will generally confer.—*Edinburgh Medical Journal, Nov.* 1856, p. 418.

DISEASES OF THE ORGANS OF DIGESTION.

28.—TREATMENT OF ULCER OF THE STOMACH.

By Dr. William Brinton, Physician to the Royal Free Hospital, &c.

[When hemorrhage from a chronic ulcer amounts to a considerable quantity, although it be only a symptom of the disease, yet we must direct special attention to it, and we may remark that the astringents we introduce, are much more efficacious than in the case of bleeding into the lungs. If there is reason to believe that the bleeding is from a large vessel, the stomach must be kept in the state of perfect rest, the supine position must be rigidly observed, and the minimum of food that will support life, taken, lest the clot which alone intervenes between life and death be disturbed.]

A more frequent and moderate oozing justifies (and demands) a more styptic plan of treatment, especially where there is no great tendency to vomiting present. Turpentine, and the sesquichloride of iron, which have, I believe, been recommended with this view, are both open to the grave objection of often exciting nausea and vomiting, even in moderate doses and dilution. The formula I most prefer consists of about ten grains of gallic acid, dissolved in an ounce of distilled water by the aid of about ten minims of the dilute sulphuric acid. But in some cases of this kind, in which the pain has led me to prescribe bismuth and compound kino powder, the bleeding has seemed to be arrested by these astringent drugs.

Lastly, whatever the nature or amount of the hemorrhage, the internal and external application of cold by means of ice, and the rigid observance of the dietary already referred to, is an indispensable part of the treatment.

The *cachexia* which generally accompanies the ulcer, as well as the hemorrhage which, in varying amount, usually occurs in some part of its course, unite to constitute one of the most important indications of treatment. This cachexia, which is the worst effect of all the other symptoms, and which constitutes (I am convinced) one of the most frequent causes of death in the general history of the malady, not only modifies and limits our application of the remedies hitherto specified, but practically measures the general success of our treatment.

The difficulty it sometimes opposes to that local treatment by which the ulcer is best allowed to heal, has already been alluded to. The system of stimulation it sometimes dictates, we shall again revert to in speaking of the dietetic treatment of the malady. At present we may chiefly view it as indicating the exhibition of *tonics* in all cases in which the state of the ulcer does not absolutely forbid the introduction of these remedies into the stomach.

Amongst the various remedies included in this class, the preparations of iron claim the foremost rank. The pathology of that chlorotic condition which is simulated by the gastric ulcer of the young female, as well as the results of the hemorrhage often implied by the lesion, alike point to these preparations as the best means of furthering that growth of the red corpuscles of the blood, which may obviate that state, or repair these losses. And experience quite confirms such anticipations of the efficacy of iron.

The chief precautions necessary to observe in its use, seem to be the following:—Frequent vomiting, or excessive and continuous pain, contraindicate it. And even when these symptoms have partially yielded to other remedies, it is better to begin with the very mildest preparation of the metal, such as the ammonio-citrate, or ammonio-tartrate. They should always be given either with, or immediately after, food:—a general rule in using them, which the presence of an open ulcer makes doubly important. And the various soluble salts of the metal should always be given in combinations that allow them to retain this form. In other words, the use of the insoluble oxide, either directly or indirectly, (as in the compound iron mixture a few hours after being made up,) should generally be avoided.

The bitter vegetable tonics are, on the whole, less important; though, in combination with other remedies, they are often useful.

Thus the infusion of calumba is not contraindicated by any moderate amount of vomiting; and that of quassia may often be given with iron. Lastly, of all the ordinary combinations of mineral and vegetable tonics, none is so elegant and so generally useful, in the latter stages of convalescence from gastric ulcer, as a mixture of sulphate of quina and iron, kept in solution by a few drops of sulphuric or hydrochloric acid. Indeed, whenever the stomach will bear quina (as it certainly will in the majority of cases after suitable preparation), a course of this energetic tonic, during at least a few weeks, is very advisable. And in those instances in which the ulcer itself seems to be a sequela of ague, such a rule becomes, for obvious reasons, still more valid.

[It is impossible to cure ulcers of the stomach by any remedies in the absence of proper regimen ; drugs, although invaluable as aids to a strict diet, are powerless as substitutes for it. Milk diet, given in small quantities at frequent intervals, is the best that can be given under such circumstances ; if the stomach be excessively irritable, it may be diluted with lime water. During convalescence the diet must be kept up as much as prudence will allow; ground rice with milk forms an excellent food, wheaten flour is best given as bread steeped in boiling water, and pressed through a muslin sieve while still hot (bread jelly) and boiled with milk. With respect to alcoholic stimulants we may say that it is advisable they should be studiously avoided : in cases of extreme exhaustion, where alcohol seems necessary it must be given as an enema. But we may ask, are there no stimulants which may afford us the advantages of alcohol without its disadvantages ? In such cases the peculiar stimulant effects of opium make it by far the most valuable of them all.]

Respecting the operation of this drug in gastric ulcer, I might say much that would be both interesting and true, but nothing that would include those elements of accurate physico-chemical research on which alone a conscientious physician ought to base his theory of this or any other medicine. As regards mere facts, I am quite certain that, though the pain often present in these cases is of course an additional indication for the use of opium, yet it is by no means the chief (far less the only) guide to its administration. It is not as an anodyne, not even as a sedative, that the opium seems to be most useful. On the contrary, my experience would lead me to conclude, that it is especially in ulcers of long duration, of large size, of obstinate character, and in broken, exhausted constitutions, that this invaluable remedy comes most fully into play:—and that the condition these circumstances presuppose being present, its use is not one whit less advantageous, even though the habitual pain is but trifling, or though (far from having to replace the customary alcohol of the drunkard) it is prescribed for a patient who has been always of temperate or even abstemious habits.

In short, I am anxious epecially to urge upon the profession the importance of giving opium in this serious (and, as my researches would shew, frequent) disease, with just the same views as those with which it has long been employed in phthisis, or (a still more apt illustration) in diabetes. To relieve this or that pain, or to check great irritation or undue secretion of this or that mucous membrane, supposing such symptoms to be present. But to support the strength, to buoy up the nervous system, and to check the waste or expenditure of the tissues generally, whether the above local symptoms are present or no. That it is thus opium aids to heal a gastric ulcer, I can scarcely doubt. And that, in this way, the same drug which diminishes the saccharine constituent of a diabetic patient's urine, may also check that destructive absorption which a gastric ulcer expresses and measures, is quite in accordance with all that we know respecting its power of lessening bodily waste.

But I am more anxious to state the fact of its usefulness in combating this lesion, than to explain the principle upon which it does so. It is, therefore, with very great pleasure that I have found my own experience of its efficacy in the ulcer of the stomach confirmed by the statements of other observers with respect to its uses in ulcer of other parts of the body. The reader may take the analogy of the two classes of ulcerated lesion at what it is worth; and may estimate at a higher or lower rate that remarkable parallelism which the pathological details I have established respecting gastric ulcer exhibit with the ordinary ulcer of the leg, as shown by Mr. Critchett's able treatise. But should he be disposed to accept statements founded on so much toilsome clinical research as mine have been, he will probably hardly fail to be struck by their perfect agreement with the independent results of a better authority in the treatment of a kindred disease. Allowing for the situation of the lesion, and for a variety of details which that situation chiefly dictates, there is hardly any difference between the opinion I have come to respecting the efficacy of opium in ulcer of the stomach, and that which has been so clearly and happily put before the profession by Mr. Skey as the result of his large hospital practice with respect to its benefits in ulcers of the limbs

As regards the method of administering opium, where vomiting is moderate, or where diarrhœa is prominent, the compound kino powder is a very convenient formula. But when vomiting is at all excessive, or resists a combination of this powder with bismuth, the drug is generally better borne in the solid form; either as a small pill of the watery extract, or a few grains of the compound soap or styrax pill, two or three times a day. The effect of opium given in this way seems to be often quite as striking as in the ordinary ulcers of the leg.—*Lancet, Oct.* 25, 1856, *p.* 454.

29.—ON THE TREATMENT OF CARDIALGIA.

By Dr. Edward John Tilt, Senior Physician to the Farringdon Dispensary and Lying-in Charity.

The volume of the brain, its complicated and regular structure, show it to be contrived for important ends, and although the relation existing between the intellectual faculties and the structure of the brain cannot be comprehended, it must be admitted. It is perfectly incomprehensible that so much vital force for good or for evil should be centralized in little irregular lumps of nervous matter, and in sundry tangled skeins of nerves, the geography of which, like that of the polar regions, is differently mapped out by successive observers; but, though incomprehensible, it is no less certain that these knots of nervous matter, and these tangled skeins of nerves, are indissolubly connected with the supreme power which guides the processes of healthy or diseased nutrition.

It appears that each separate ganglion sends its contingent of nervous influence to the central ganglia, which re-acts on the brain, and that the force with which the ganglionic nervous system is endowed is as much centralized in the epigastric region as the intellectual faculties are in the brain. Discordant as medical theories generally are, it is singular how often the importance of considering vital force as centralized in this epigastric centre has been prominently asserted. Galen and Fernellius called it the principal lever of the human forces; Van Helmont there placed his *Archéus*, or principal ruling power; Wrisberg and Lobstein treated of it as the *cerebrum abdominale;* Hunter called it the sensitive centre, and the centre of sympathies; and Bichât, Broussais, &c., considered it the prime conductor of nervous influence. The importance of this region as a centre of power is even shown by the erroneous theories which made some, with Buffon, place the seat of the soul in the diaphragm, and by the popular belief that the human passions are centred in the præcordia, whereas they merely react upon it as stimulants when the passions are of an exhilarating nature, or as depressants when they are of a contrary nature. The common consent of mankind, the convictions of many illustrious men, and my own experience, fully persuade me that the epigastric region is a real centre of nervous power, and I therefore seek to act upon it by such remedies as seem likely to enable one to increase or diminish its power or to regulate its disordered action. This should be done, if only to relieve the painful, distressing, and the unaccountable sensations experienced by patients in this region; but being firmly convinced that this ganglionic nervous centre is in constant action and reaction on the brain, and having seen it so often derange the mental faculties at puberty, during pregnancy, puerperality, lactation, and cessation, I deem it imperatively urgent to apply remedies to this centre. Another important reason for seeking in every way to relieve epigastric pain and anomalous sensations at the change of life, is, that women will not endure these sufferings without seeking relief. If the faculty do not relieve them, they will instinctively fly to stimulants—the poor to porter and gin, the rich to wine and brandy. Is it not then better to try to alleviate these distressing symptoms by medicine, than to run the risk of women becoming gradually addicted to the most deplorable habits?

When the mild forms of cardialgia are presented, the epigastric uneasiness, the sinking and faintness, I first ascertain whether these sensations depend upon foul secretions requiring purgatives, before ordering my sedative mixture before meals; the alkali after meals; three grains of blue-pill and two of extract of hyosciamus, every, or every other night; a mustard or a hot linseed-meal poultice, sprinkled with coarsely-powdered camphor every other night; dry cupping, as recommended by Galen, and oil-silk over a cotton wool poultice, or a camphor sachet, to be worn during the day on the pit of the stomach. If the pains continue, I prescribe a pitch, a belladonna, or an opium plaster, made soft, so as to embody from five to ten grains of opium to the square inch. The plaster should be left on, and should it fail to relieve, I repeat it every four or five days, or I apply two, one to the pit of the stomach, and the other to the sensitive region of the spinal column; or I order alternately an opium or a belladonna plaster every fourth day. If there be sleeplessness and nervous irritability, I give from five to ten grains of Dover's powder every, or every other night; and, with the intention of acting on the seat of the disease, I have given the twelfth of a grain of acetate of morphine every one or two hours, until the induction of drowsiness. If, besides the sensation of prostration, there be downright pain, resisting the local means previously detailed, I sometimes have, with benefit, applied a piece of lint steeped in chloroform, and covered with oil silk, to the pit of the stomach, retaining it in its place by a bandage. Dr. Ameuille has, I find, thus used chloroform for similar affections. A blister, though often ineffectual, has sometimes relieved the pain; and this reminds me that Comparetti and Barras derived no utility from blisters in the gastralgic affections they attended at Venice and at Paris. Lorry also thought them of little use. In the worst cases of cardialgia, where there were fits of agonizing epigastric pain, its intensity was often abated by from thirty to sixty drops of aromatic spirits of ammonia in the smallest possible quantity of water; or by the same quantity of chloroform on a lump of white sugar, and melted in a little water; or by chloric ether, which was less disagreeable to take; or by twenty drops of sulphuric ether, in one ounce of which a drachm of camphor had been dissolved; or by a drop of essential oil of peppermint, on a lump of sugar, and dissolved in water. In some cases the paroxysm would take its course, and abate according to some law of its own; in others all milder remedies failing, I have denuded the skin of the epigastric region to the extent of a crown-piece by strong blistering tincture, or placed on its surface a piece of linen wetted with strong spirits of ammonia, applying afterwards from three to six grains of acetate of morphine. This plan of treatment has been praised by Barras. Veratria and aconitine are also invaluable agents in difficult cases. I have employed them externally, as Turnbull has done in other affections, incorporating the active agent with lard, one scruple of veratria, or one grain of aconitine to one ounce of lard, directing a piece the size of a filbert to be rubbed on the epigastric region for a quarter of an hour, until warm and pricking sensations were excited. This application may be repeated every second or third day. Trousseau and Mathieu speak highly of this method of applying veratria; and the following liniment recommended by Dr. Oldham for the neuralgic affections of women, may be tried with advantage :—Extract of belladonna, half a drachm; tincture of aconite, (Fleming's,) four drachms; for an ounce and a half of soap liniment. Such are the plans of treatment I habitually adopt; I shall now briefly notice some medicines, praised by good authorities, but of which I have only made an occasional use.

Dehaen, Barras, and many who have paid attention to the obscure affections under consideration, praise, equally with myself, the internal and external exhibition of opium, hyoscyamus, camphor, and cherry-laurel water. Dumas, of Montpellier, frequently prescribed for nervous affections of the abdominal organs—castor, thirty grains; camphor, fifteen grains; opium, eight grains; conserve of roses, a sufficient quantity: to be divided into fifteen doses, one to be taken every day. Dr. Shearman gives half a grain of nitrate of silver, with the same quantity of opium, and five grains of extract of camomile, three times a day; sulphate of quinine, diluted in an acid mixture; and one-drachm doses of potash water, to prevent the formation of sugar in the urine. J. Frank considers that the principal remedy for neuralgia of the cœliac plexus is oxide of bismuth, the third of a grain given two or three times a day, but not continued too long, for fear of completely deadening the sensibility of the nerves. He says that "oxide of bismuth has a decided influence on the nerves of the stomach, and that oxide of zinc is endowed with a similar power of appeasing the nervous affections of the cœliac, and of the abdominal ganglionic plexus,"—assertions evidently bearing the stamp of exaggeration. Hufeland writes favourably of hydrocyanate of zinc, one to four grains given two or three times a day. Nitrate of bismuth is frequently given in ten to twenty-grain doses, suspended in a little mucilage, and may be repeatedly taken on an empty stomach.—*Lancet, Dec.* 13, 1856, *p.* 644.

30.—*Arrest of Hiccough.*—M. Geysers states, that an unfailing mode of treating this affection when obstinate, and whether idiopathic or symptomatic, consists in making more or less forcible compression, for a few seconds or even a minute or two, at the inner extremity of, or upon one or both clavicles. He suggests that this may operate by its influence upon the phrenic nerve. M. Latour refers to a case of obstinate hiccough, which was immediately relieved by the employment of chloroform.—*Union Médicale.—Med. Times and Gazette, Jan.* 24, 1857, *p.* 94.

31.—*Idiopathic Dysentery Treated by Bismuth and Astringents.*—We all know the value of bismuth in the dysentery and diarrhœa of phthisis—in fact, its importance cannot be over-estimated in that particular affection. We have had the opportunity of watching a case of idiopathic dysentery in the Royal Free Hospital, under Dr. BRINTON's care, of a young man who was admitted, on the 4th of February, with as many as twenty dysenteric motions per diem. Its origin was due to cold, whilst working in a gas factory by night; there was no evidence of the existence of putrefying matter in the neighbourhood. Under the influence of a mixture consisting of a scruple of bismuth, ten grains of compound powder of kino, two drachms of mucilage, and an ounce of infusion of krameria, every six hours, conjoined afterwards with enemata every night, of twenty minims of tincture of opium, two drachms of tincture of catechu, and two ounces of decoction of starch, the stools gradually diminished to only one daily for the last fortnight; the last three days he has had none. At the same time, the most careful attention has been paid to his diet, which consists at this moment (March 16th) of fish. He has been a voracious eater, and is now only kept in hospital for the purpose of regulating his diet. The treatment pursued here proved highly satisfactory, and is well worthy an extended trial in dysenteric complaints. We will not say the good effects were solely due to the bismuth. Of late years, it has been specially recommended, not only in the diarrhœa of phthisis, but also that of enteric or typhoid fever, and the chronic diarrhœa of children.—*Lancet, March* 28, 1857, *p.* 317.

32.—*Glycerine and Borax in Cracked Tongue.*—Dr. BRINTON had under his caren a inveterate cracked tongue, which (like that of the late Charles Mathews) had baffled all attempts at alleviation for many years. It could not be referred to any syphilitic poison, and rendered eating, and especially speaking, very painful. Dr. Brinton made use of a favourite remedy of his in such cases—viz., borax dissolved in a lotion of glycerine (Price's Patent Candle Company's) and water (two scruples, one ounce, and four ounces respectively). It at once gave marked relief; and after a few days, during which it was the only remedial agent, the improvement seemed increased by iodide of potassium and bark taken internally. The patient has now considered himself well, and discontinued the lotion for some weeks, and the cracks are only visible as depressions in the mucous membrane.—*Lancet, March* 28, 1857, *p.* 318.

DISEASES OF THE URINARY ORGANS.

33.—ON HÆMATURIA.

By Dr. W. R. Basham, Physician to the Westminster Hospital.

[The author remarks that hæmaturia, always a source of anxiety and alarm to the patient, is a symptom, the importance of which varies according to the part of the urinary apparatus from which it is derived. It may indicate the presence of a temporary condition of disease, or of permanent organic mischief.]

Hæmaturia may occur in the course of many different diseases. It may be symptomatic of various diseases of the kidney: 1. Simple inflammation or nephritis. 2. The early stage of Bright's disease. 3. Scarlatinal dropsy. 4. Calculous pyelitis, including under this form gouty inflammation. 5. Tubercular pyelitis,. 6. Cancer of the kidney. Or, secondly, the hemorrhage, proceeding from the kidneys, may not imply any organic disease of these organs, being symptomatic only of a general hemorrhagic condition, in which the kidneys participate with other organs; such is the hæmaturia in purpura and scurvy. It occurs also in some febrile disorders, scarlet fever, variola, and typhus, and it is sometimes prevalent in pyæmia. Moreover, the blood may be derived from the bladder, prostate, or urethra, quite independent of the kidneys. Again, hæmaturia has been noticed, occasionally occurring in women, as vicarious of the menstrual flux, an example of which was lately under Mr. Guthrie, in Percy ward, in a woman suffering from abscess in the mamma. In this case the catamenia had been absent during the previous three months; but for several consecutive days at the menstrual period blood was passed with the urine. There was no increased frequency of micturition, nor any pain or irritability about the urinary passages. The urine, examined under the microscope, presented blood-discs, amorphous fibrine highly stained with hæmaturia, and a few epithelial corpuscles, apparently from the pelvis of the kidney and ureters. Rayer mentions instances of this vicarious hæmaturia.

There is yet another form of hæmaturia, which appears to be unconnected with any of the preceding morbid conditions, and the only exciting cause which can be detected is mental agitation. If, in particular constitutions, there be this singular idiosyncrasy, that mental inquietude or excitement can bring on attacks of hæmaturia, temporary in their duration, innocent in their sequel, and unconnected with organic mischief in the kidney, it must be manifestly of importance to ascertain if possible the symptoms by which such an unexceptional and rare form of hæmaturia can be distinguished from the more serious cases arising from calculous or other organic disease.—*Lancet, Jan.* 31, 1857, *p.* 107.

34.—ON THE DETECTION OF LEAD IN THE URINE.

By Dr. Edwd. Sieveking, Assistant Physician to St. Mary's Hospital.

[Since the memoir of M. Melsens on Metallic Poisoning the iodide of potassium has been generally employed to eliminate metallic poisons, Dr. Parkes has also proved that during the administration of this remedy, the lead actually passed off by the kidneys. We give the following as a further corroboration that the lead is eliminated by this channel.]

A plumber, aged 34, was admitted into St. Mary's Hospital, under the care of Dr. Chambers, on the 7th January, 1857. He had had colic three or four times previously, but had experienced no symptoms of saturnine paralysis. On the 7th of January he was suddenly attacked with epileptic fits. He had a succession of fits, which lasted for thirty-six hours. When I saw him on the 14th of January he stated that he had no recollection of anything that happened from the time of his admission into the hospital to the 12th of January; that he woke up with severe headache occupying the entire head, with vertigo, and found that he had lost the power of moving the left leg and the right arm; the left arm and the right leg continued normal both in regard to sensation and motion. There was decided diminution of sensation in the affected limbs, and the right hand was in a permanent semiflexed condition, with very little power remaining of opening or closing the fingers. On first recovering consciousness the people in the ward seemed to him as small as dolls, and the opposite side of the room seemed to be sunk forty feet below his own level. These erroneous impressions he was conscious of at the time, and they disappeared in four days. The urine was very scanty. There was a marked blue line round the margin of the upper and lower gums. I would remark that on testing the sensibility of both hands with an æsthesiometer, (an instrument which I have had constructed for the purpose of measuring the amount of sensibility in different parts of the body,) I found no deviation from the normal standard on the 16th of January, as the patient was able with the tips of the fingers of either hand to distinguish a distance of less than 1-10th of an inch; at the same time that the patient, when I first saw him, complained of want of sensation in two of the limbs, the same limbs were very tender, and a slight pinch caused pain, so that we had to deal with that singular perversion of the sensitive function to which the term anæsthesia dolorosa has been applied, though without regard to the etymology of the words. This susceptibility to pain remained after the ordinary tactile sensibility appeared to be restored. My friend, Dr. Markham, who had charge of the patients of Dr. Chambers, kindly at my request prescribed on the 10th of January the iodide of potassium in 10 grain doses, three times a day. A rapid improvement was perceptible. The amount of urine rapidly increased; but, although on two occasions after commencing the iodide of potassium the urine of at least twelve hours was tested for lead, none was found.

The fact that Dr. Bernays himself, the able clinical lecturer at St. Mary's Hospital, kindly charged himself with these analyses, will be a sufficient guarantee that no lead was present. I again ordered the urine to be collected from the 20th to the 21st of January, and although probably only about one half of the urine secreted had been preserved, owing to the remainder having been discharged in defecation, I obtained 860 cubic centimeters, of a reddish-yellow hue, and turbid. This was evaporated down nearly to dryness; I boiled the residue with nitro-hydro chloric acid, and filtered. The filtrate, on the addition of sulphide of ammonium or of sulphuretted hydrogen, gave a copious precipitate of the sulphuret of lead.—*Med. Times and Gazette, Feb.* 14, 1857, *p.* 163.

35.—ON DROPSY.

By Dr. George Fife, Physician to the Queen's Hospital, Birmingham.

[The existence of dropsy as an idiopathic disease has been denied by some, but Dr. Fife says, that from very extensive experience he is convinced that dropsy is quite as much a disease as either fever, or, in fact any inflammation whatever part or organ such state may involve. That dropsy frequently occurs as a mere result of disease in some of the important organs of the body, does not admit of doubt, as for instance, in a case of hypertrophy of the heart, accompanied by dropsical effusion, the organic lesion of the heart must be considered as the primary disease, but in a great number of cases dropsy is a disease independent of any organic cause and admits of a complete and permanent cure.]

One fact in connexion with the pathology of dropsy, I deem it necessary to reiterate—that is, that in every such case, you have a decided loss of equilibrium between the exhalants and absorbents. This I now repeat, because, when I come to the consideration of the comparative value of elaterium and croton oil, you will find that my preference for the latter mainly depends upon this conviction.

In a subsequent part of this lecture, it will be my duty to demonstrate to you, what I conceive to be the real therapeutic difference between these two medicines, and on what foundation my preference of croton oil is actually based.

From what has now been said, you will understand that, in my opinion, dropsy may be idiopathic, or, in other words, a disease in itself. In most cases you will find that some very active agent has been in operation to produce the disease, however obscure such agency may be; and this is more especially the case when dropsy occurs in an acute form. I have had several such cases under my charge in the wards of the Queen's Hospital; and if you cannot call them to mind on the present occasion, the fault is yours, not mine, as both at the bedside, in going my diurnal round, and here, I have called your attention especially to them. This form of dropsy I have known to follow the suppression or cessation of almost every inordinate discharge; and such of you as have really attended my practice in the hospital cannot fail to remember cases illustrative of this statement. You may, perhaps, more particularly call to mind one case in which ascites, with anasarca, followed a suppressed gonorrhœa. This case, in the course of less than three weeks, left the hospital perfectly cured—I say perfectly cured, because there was no indication of any organic cause for the disease, and, in the absence of such, there is no valid reason, in a generally healthy system, for apprehending a recurrence of the disease.

In addition to the forty-three cases I have enumerated, there are now three additional cases in the wards,—two males and a female,—one of the two first manifestly depending on general derangement of the system rather than on any organic lesion. The other as certainly arising from hepatic disorder, if not actual organic disease. The latter I apprehend to be the case; and if this poor fellow's liver be really diseased, I have not the slightest doubt that the disease is cirrhosis. The third case, to which I would now direct your attention, is that of A. P.— She is a young woman, twenty-three years of age, who was confined about three weeks ago, and, from the history of the case, it appears that dropsy had supervened almost immediately on her delivery. She is suffering from ascites to an enormous extent; she is also suffering from "phlegmasia dolens" of the right leg. This I only ascertained to be the fact on very minute inquiry, instigated by the fact that, after the disappearance of the œdema from the left leg, the right continued not only immensely enlarged, but also offered to the most cursory observer the whiteness, hardness, and uniform swelling of the limb, which is met with only in this disease. On more minute inquiry, I find that previously to any tumefation of the limb taking place, she suffered from that acute and agonizing pain in the groin which, according to my experience, is the invariable precursor of phlegmasia dolens. The ascites is gone, the œdema of the left leg is hardly perceptible, and the enlargement of the right is sensibly diminished under the use of the roller of flannel, the pressure being most carefully and gradually increased on each application. This poor woman, however, can hardly recover, as now pulmonic symptoms have supervened, which are in themselves far more than sufficient to destroy life. After this statement you will agree with me that this is not a case of simple acute dropsy. Of the dropsy she is at this moment cured, but she will most assuredly sink under the complication which I have described.

As to the treatment of dropsy. There are several points connected with the diagnosis of the disease to be attended to before you can hope to arrive at anything like a rational mode of treatment. There is the great and important distinction first enunciated by Dr. Blackall —viz., the distinction or diagnosis between hepatic and renal dropsy, and this is of more importance than may at first sight be apparent, from the vast influence which it exerts over our therapeutics. Dr. Blackall, long before Bright's disease or albuminuria was heard of, showed that in almost every case, where dropsy depended on disease of the kidneys, albumen existed in the urine, whilst in similar cases of hepatic origin such was not the case.

We have, however, dropsy arising from causes altogether independent of those to which I have just alluded, and most especially in young persons and after scarlatina or scarlet fever. In these cases, I find the treatment is comparatively simple. Except one case, I never in my own experience, met with an instance of dropsy after scarlatina which proved fatal.

[Dr. Fife has a great predilection for croton oil in the treatment of dropsy, whether as a curative or merely palliative agent. He says]

Let me now, as briefly as the subject will allow me to do, state to you the grounds on which I prefer it elaterium, which has so long held the first place as a remedy in dropsy. If you refer to the best works on materia medica and therapeutics, you will find that elaterium and croton oil are both put down as *hydragogue cathartics.* In regard to elaterium, this is quite correct; but, as for croton oil, I, from extensive experience, affirm that, although a *drastic*, it is not a *hydragogue* cathartic, being in this respect inferior to a seidlitz powder. In illustration of this, I can say, and without fear of refutation, that an ounce of Epsom salts will give rise to more watery evacuations than even *three* minims of croton oil. What, then, it may be asked, are the grounds on which, and why do I prefer the croton oil? Why, because it at once diminishes the quantity of fluid, and, at the same time, exalts rather than depresses the power of the absorbents; in this respect, affording a well marked and important distinction between it and elaterium.

My objections to elaterium are the following:—no man can deny that it is the most potent hydragogue cathartic we possess, and that from this property it induces the most speedy diminution of dropsical effusion; but what is its ultimate and counterbalancing effect? It as certainly depresses the power of the absorbents; hence any benefit which arises from the speedy, though temporary, diminution of the dropsy, is far more than outweighed by this inseparable, and, so far as my observation extends, invariable result. Again: given with the utmost discretion, it is a medicine, the action of which it is impossible either to predetermine or to regulate. On many occasions I have seen all but fatal syncope follow its exhibition. Have any of you ever witnessed such an effect from my mode of giving the croton oil? Never: nor have you seen a single instance of hypercatharsis, tenesmus, or any other dysenteric symptom ensue on its employment. The croton oil also possesses another very marked superiority over other purgatives, not only in the disease under consideration, but also generally—i.e., that in a very small compass it affords us at once a safe and certain purgative. For this reason it is that I so very frequently use it as an *immediate* and active purgative in cases of a comparatively ordinary character.

In dropsy, I feel convinced, from an extensive experience, and most careful observance of its action, that very much more of its efficacy is attributable to its stimulant effect upon the absorbents, than to its mere cathartic powers. No doubt persons unacquainted with its action will hold up their hands with astonishment at the *diurnal employment* of such a potent medicine; and yet every one who now hears me has seen patients taking it daily, even for weeks consecutively, with not only the most perfect impunity, but also with the most salutary results. Wherefore, I consider myself fully justified in affirming, that croton oil is not only the most effective, but also the safest medicine in dropsy; as I am not at this moment aware of any one of the patients whom I have treated with it, some of them in the last stages of the most formidable diseases, and reduced to the lowest possible state, having even fainted after its action; whilst even in the most hopeless of these cases, a greater or less degree of relief was experienced from its employment.

Thirteen years have elapsed since I first brought this treatment before the profession. At that time I was in the habit of giving the oil in doses of *three minims*, from which I never witnessed any unpleasant effects—although Mr. Braithwaite, in his "Retrospect,"* took occasion to honour me with a sneer. You may feel disposed to ask why I am now content to exhibit the medicine in doses of *one minim?* Because I find that the last more minute dose fulfils my object. Some of you may be aware that Rassori, who first introduced the antimonial treatment in inflammatory diseases, more especially of the chest, gave the medicine (potassio-tartrate of antimony) in doses of three grains, in which practice he was followed by a host of continental and British practitioners. Now you all of you know that I generally give this medicine in doses of from one-sixth to-one-quarter of a grain, and that I obtain the desired effect, at the same time guarding my patient against the consequences inseparable from the administration of such a medicine in the larger dose.

As to diuretics: these medicines are doubtless to be regarded as powerful auxiliaries to other remedial measures; but you will also constantly see that they do not produce the effect anticipated and wished for. This is more especially the case where the disease is of renal origin. The reason of this is obvious, the cause of the disappointment being, that from the morbid condition of the kidneys, those

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[* We certainly value croton oil in these cases almost more than any other medicine, and the profession is greatly indebted to Dr. Fife for his advocacy of this treatment, in which we quite agree, except in the doses of *three minims*,—one or two drops given daily, or even oftener, according to the effects, are quite enough, and the effects in the cases related by Dr. Fife are very satisfactory.—ED.]

agents which, acting on a healthy organ, would produce the desired effect, have no power over the same when in a state of disease.

In conclusion, I may observe that, to Mr. Huntley, of Howdon, near Newcastle-on-Tyne, I am indebted for the plan of treatment which I now not only advocate, but from which I have obtained such satisfactory results. This acknowledgment I make, not only from a sense of justice, but also as a comparatively small tribute of respect to very considerable practical acumen and experience. If the plan of treatment now recommended be carried out with due care and discrimination, without which any therapeutic agency becomes mere empiricism, you will find that I have not said one word regarding the croton oil treatment of dropsy, which is not more than justified by the facts which I have brought before you.—*Lancet, March* 14, 1857, *p.* 259.

36.—*On Diabetes.*—In his concluding lecture, delivered at the College of Physicians, on the subject of Diabetes, Dr. Garrod, in advocating the superiority of dietetic over any other treatment in this disease, spoke very favourably of the effects of the bran-bread which has been described by a member of our profession, Mr. Camplin, and prepared, under his direction, for use in some of our hospitals. This bread is made of bran, which ought to be very finely ground, mixed with butter, eggs, and milk, and leavened by hydrochloric acid and carbonate of soda. In this form it constitutes a light cake, of a brown colour, something like gingerbread in appearance, and is by no means unpalatable.—*Med. Times and Gaz., March* 7, 1857, *p.* 242.

37.—*New Test for Sugar in Urine.*—Krause advocates the use of the test-fluid, originally proposed by Luton, containing the bichromate of potash in solution. He proposes that the fluid should be made thus:—Dissolve ʒi. of bichromate of potash in ℥ij. of aq, distill., with the addition of ℥ij. of concentrated sulphuric acid. When glucose urine is treated with an equal bulk of this fluid, the reddish-yellow colour changes, in a short time (*instantly* by the application of heat), into a beautiful bluish-green colour, more or less dark, according to the degree of concentration, and carbonic and formic acids escape during effervescence. A dirty brownish-red colour (with occasionally a tinge of green) results if no sugar be present. Whilst Krause deprecates neglect of the well-known tests proposed by Trommer and others, he considers this one as more certain and less difficult than any other.—*Henle's Zeitschrift.*—*Edin. Med. Jour., April* 1857, *p.* 945.

38.—ON SOME OF THE PATHOLOGICAL INDICATIONS OF THE URINE.

By Dr. Thudichum. (Read before the Medical Society of London.)

The ease and simplicity of the analysis of urea was connected with so little expense in time, that one might reasonably expect that no practitioner would pronounce upon the quality of any urine without having, by that method, accurately ascertained the amount of the urea it contained. The total quantity of urine discharged by healthy adult persons in twenty-four hours the author estimated to vary between 324 and 432 fluid drachms. The variation, or a certain mode of variation, formed an essential symptom of all diseases. Thus the quantity of the urine was diminished in all acute febrile diseases, and the fall and rise or low state of the quantity of urine was pathognomonic of an increase, decrease, or continuance of the intensity of the disorder. The author continued by stating that the amount of the solids discharged by the urine in twenty-four hours had hitherto been underestimated; for the daily average given by Dr. G. Bird was 650 grains, whereas, by the most accurate observations made with better methods, the mean amount of solids was found to vary between 849 and 1019 grains. Now, in disease generally the amount of solids sank from the daily 850 or 1000 grains to 650 or 550 grains, and then was formed mostly at the expense of the body, if little or no food was being taken. The author then considered in detail the pathological indications of the solids in different diseases; explained, by means of a diagram and a scale of colours, the method of Professor Vogel for determining the amount of colouring matter or urohæmatine discharged by the urine, and the pathological indications thereof; and proceeded to consider the—

Physiological quantity and pathological indications of urea.—Numerous experiments had shown that a healthy man, who lives well, discharges on an average from 463·32 grains to 617·76 grains of urea in twenty-four hours, which, calculated upon one hour, gave 19·3 grains and 25·74 grains respectively. For practical purposes, these figures were valuable, even though subject to certain variations. As urea was the principal product of the metamorphosis in the body of nitrogenized food, the quantity of urea must stand in a direct relation to the quantity of food taken, or, if little or no food be taken, to the amount of nitrogenized component parts of the body disintegrated in the place of food. In this sense must be taken the expression that urea is the measure of dissimilation, if he might be allowed to use this term as the counterpart of assimilation. "Der Harnstoff ist das Maass des Stoffwechsels," says Bischoff; and this was so nearly true, that with a slight modification of the sentence, we might say, urea is the measure of the most important part of the change of matter in the system. The intensity of the change was expressed by the amount of urea in the urine. More urea was produced during waking than during sleep, more during bodily and mental exertion than during an equal period of inactivity. A large amount of nitrogenized food taken into the stomach would increase the amount of urea above the average; a small amount of vegetable food would make it sink below the ordinary medium. An excess of urea was common in the stadium increments up to and over the acme of all acute febrile diseases, such as typhus, pneumonia, pyæmia, and others; and the total quantity of urea discharged in twenty-four hours might amount to 772 grains, 926, or even 1235 grains, being double the amount of that discharged during health. This increase was the more an important feature of disease, as the ingestion of nitrogenized matter fell to a minimum at the same time; in other words, because these patients had mostly got no appetite, and if they had, were caused to restrain it by the dietary rules of their medical attendant. As soon, however, as the fever had abated, the amount of urea would sink, and that the lower below the normal quantity the less food the patients were able to take from the loss of appetite continuing, or from the inadequacy of the organs of digestion to perform their task; but as the patients recovered appetite and strength, the amount of urea would rise to its usual height. The same process was observed during the exacerbations of chronic disease, which in fact constituted an acute episode in the long train of symptoms. So an exacerbation phthisis might be accompanied by a urine similar to that of an attack of pneumonia by containing an excess of urea. But in diseases which were of a chronic nature, and accompanied by impaired nutrition, the amount of urea sank below the average. The lowest amount of urea which the author had ever observed to be discharged during twenty-four hours was 75 grains in 200 fluid drachms of pale, faintly alkaline urine. This was from a lady suffering from an ovarian tumour, for which she had been salivated several years ago. The growth of the tumour had been arrested since that time, but an anæmiated condition of the body had established itself. So low an amount of urea as 75 or 90 grains in twenty-four hours, generally, only occurred towards the fatal end of the disease, when not only was the production of urea very limited, but the excretory activity of the kidneys began to get languid also. The diminution of the quantity of urea might be due to the failing of the excretory activity of the kidneys only, though at the same time an excess might be produced in the system. The excess was thus retained in the body, and would cause uræmia. In dropsy not connected with disease of the kidney, urea was also retained; but here diuretics might be administered. The amount of ureawould here indicate the amount of depuration effected, just as in retention of urea the smaller amount discharged would allow us to calculate, taking the whole case into consideration, the amount produced, and by subtraction the amount retained in the blood.—*Lancet, Jan.* 3, 1857, *p.* 10.

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AFFECTIONS OF THE BONES AND JOINTS, &c.

39.—ON EXCISION OF THE KNEE-JOINT.

By R. G. H. Butcher, Esq., Surgeon to Mercer's Hospital, Dublin.

[In a former memoir on Excision of the Knee-Joint, published in February 1855, Mr. Butcher gave abundant evidence that the danger of this operation is considerably less than that attending amputation of the thigh, and that the after utility and seemliness of the limb were vastly superior to any artificial substitute; also, that the growth of the limb was not checked by excision of the joint in childhood. He also dwelt upon the necessity of carefully selecting the cases for excision, and not allowing the desire for fame to charm away the stern dictates of judgment. Another point on which great stress was laid was the propriety of dividing the bones from behind forwards. By the mass of evidence which has been adduced in Mr. Butcher's second memoir all these facts are abundantly confirmed.]

Excision of the knee-joint has been objected to by some, owing to the tediousness of the convalescence. I endeavoured to meet this objection in my former essay, and I adduce in the present paper some instances of very rapid recovery,—cases treated by Fergusson, Erichsen, and others; but while I admit that in some recovery has been retarded, yet I think the ultimate benefit has more than compensated for the delay. On this point I shall just quote a passage from Mr. Erichsen's admirable book on Surgery:—"It has been urged against the excision of the knee-joint, that convalescence is tedious and prolonged, but this argument can, with justice, have but little weight; if a useful limb can be preserved to the patient, it can matter but little if a few additional weeks are devoted to the procedure by which it is maintained." On this ground, also, I find an objection has been raised to its adoption in military surgery. In the Report of the Crimean Medical and Surgical Society, published in the 'Medical Times and Gazette' for September 13 and 20, 1856, Dr. Macleod makes allusion to excision of the knee-joint, and states:—"The only case of excision of the knee-joint had been performed in the General Hospital in camp. The ball had penetrated the joint, and lodged in the internal condyle; that no symptoms had appeared for ten days; then inflammation had set up, and the operation was performed a week after. When the wound was nearly healed, symptoms of pyemia supervened, and he died six weeks after the operation." "He considered the operation was not adapted for military surgery, from the length of time necessary for recovery." This case, I conceive, affords a very admirable lesson as to how great an amount of repair may be set up and accomplished in the short period of six weeks; for the Report says:—"When the wound was nearly healed, symptoms of pyemia supervened, and he died six weeks after the operation." Now I think it may be presumed, when so much had been accomplished in a few weeks, had not this fatal affection stricken the patient, that perfect recovery would not have been tedious, or restoration prolonged, and, therefore, the observation, "That the operation was not adapted for military surgery from the length of time necessary for recovery," could not be sustained by this case. I am fully alive to all the difficulties which military surgeons frequently have to contend against, and likewise to all the benefits and advantages arising from rapidity of cure in military surgery; but every civil surgeon believes the same to hold good relative to the cases in his hospital; and he looks upon, and estimates the life, and the time, of the industrious artisan, as being in every way as valuable as that of the paid soldier of fortune. No doubt, after gunshot injuries the parts are generally so shattered, that few cases can occur to which the operation of excision would be applicable; but if, as in the case just transcribed, the injury is limited, there can be no reason why the operation should not be successful. Here, as in civil practice, the surgeon must make his choice between amputation and excision, according to the condition of the parts.

Sir George Ballingall, in the "Outlines of Military Surgery," fifth edition, p. 397, writes:—"An amputation above the knee, however, I have long looked upon as a very hazardous operation, from the constitutional disturbance which the removal of so large a portion of the body necessarily involves; and looking to the excision of the knee-joint as likely to involve less of this constitutional disturbance, I could not be thought to discourage it as a primary operation."

Another great question presents itself in reference to this operation, and may be considered under two heads:—

1. *Does an error in diagnosis, as to the suitableness of a case for excision, debar the patient from the likelihood of cure by amputation?* Certainly not. The patient is insensible, and, therefore, suffers no prolonged shock; and if the bones are found extensively diseased, I would say, to the terminations of their expansions, amputation should be performed at once; otherwise, if life be preserved, the limb would only be a useless appendage. Now I shall bring to bear upon this point a very interesting case by Mr. Hutchinson, Surgeon to the Metropolitan Free Hospital, and detailed to the Pathological Society of London:—A boy had been subject to chronic disease of the right knee for four years; until within a month of the operation, no abscess had

ever broken externally. When placed under Mr. Hutchinson's care, the history was—that for the last six months the joint had been getting much worse, and that the boy's health was failing. Believing the case a suitable one, Mr. Hutchinson advised an excision of the joint. In the performance of that operation, the following condition of parts was found :—The articular cartilages were everywhere removed, and the opposed surfaces of bone, except where united by adhesions, were in a state of caries. There was a deep ulcer, extending into the patella, the cavity of which would have contained a filbert. In the left side of the head of the tibia was a cavity, into which, for the depth of half an inch, the first joint of the finger entered easily. The condyles of the femur having been sawn away, two patches of yellowish material, infiltrated into its cancellous tissue, were seen ; and also the cavity of an ill-circumscribed collection of pus. A second slice of the bone having been removed, a nearly similar condition of things was still found—a small abscess lined by tough lymph, and capable of holding a small nut, having been opened. It was thus made evident, that unless by shortening the limb to an extent which would make it useless, it would be impracticable to cut away all the diseased bone, and amputation was accordingly decided on and performed. Mr. Hutchinson remarked, that the pathological interest of the specimens consisted in their showing several distinct abscesses in the bone, and in the circumstance that the existence of them had not been rendered probable, by the severe pain usual in such cases. With regard to the operations, he believed that, although it had not been deemed wise to persevere with the excision, *his patient had lost nothing whatever by the attempt made to save his limb.* He had been, throughout its performance, in complete insensibility from chloroform, *and within six hours afterwards was in as good a condition as he could possibly have been after amputation only.*"

Now, as to the second part of the question,—*Is amputation likely to be successful when performed some days after excision, owing to some unfortunate circumstances having arisen?*—the cases in the foregoing report answer in the affirmative. In seven instances amputation of the thigh was performed, and all made rapid recovery, save one. How satisfactory this return as contrasted with the result of the wholesale lopping off of limbs practised in one of the largest hospitals in London.

In my former essay I dwelt upon the constitutional management of the patient after excision, and the necessity for a very abundant supply of stimulants and sedatives, proportioned to the age and habits of the person—nutritive diet being given according to the powers of assimilation. I again advert to the enormous quantities of wine and opium which I prescribed myself, and with the best success. One word more, for the safety of the patient—the operating surgeon must not lose sight of the case ; to him is intrusted the life of the individual : he should have the deepest interest in its success.

As a stimulus to others for exertion, and as an evidence of what may be achieved by the operation of excision of the knee-joint, I shall state the impression produced upon an impartial judge, the Irish correspondent of the 'Medical Times and Gazette,' upon seeing the man, whose case I have recorded in the early part of this paper, and whom I exhibited at the first meeting, this session, of the Surgical Society of Ireland.

"Mr. Butcher made an exceedingly instructive and interesting communication on the subject of excision of the knee-joint, and illustrated the efficacy of the operation, not only by a series of very beautiful casts, drawings and preparations, which were laid upon the table, but by the production of a man on whom he had operated three years previously, and whose appearance of rude health, combined with the trifling amount of the deformity left, and of the impairment of his power of locomotion, was the best proof of the complete success of the proceeding to which he had been subjected. The idea of a stiff joint is almost necessarily associated with that of rigid and awkward powers of motion; but in the present instance, it was remarked by all who were favoured with the opportunity of seeing the man who had been operated on, that he had acquired not only a free, but even a graceful, movement of his legs. He jumped upon a chair and down again, walked across the room, and readily took of the laced boot and stocking which he wore; in short, it was difficult to perceive which was the leg from which the knee-joint had been excised, without a close examination, so as to see the deep cicatrix left."

It is with great satisfaction and pride I have received from Mr. Fergusson, the distinguished surgeon of London, whose name is so intimately identified with this subject, and, indeed, with all the improvements of modern surgery, the following letter:—

"I am glad to learn that you are again working at the subject of excision of the knee-joint. It is still full of interest; and if the grave question, as to the propriety of the operation be not already solved, I have every hope that, with your labours, and the exertions of others, we shall have ere long the proper data on which its true character must be finally determined. I shall be anxious to see your statistics, although I think we already have fair evidence, that the operation is probably less fatal than amputation in the thigh. If this is once fully proved, then there can be no doubt that the proceeding must be preferable to amputation, as the natural leg and foot are, with few exceptions, far superior to artificial substitutes.

"The occasional deaths which have occurred after the operation, from the time of the Moreaus to the present day, seem to me no greater objections to this proceeding, than to amputation; and the strongest argument against it seems to be the length of time needful (even in the most satisfactory cases) for perfect recovery. This point requires investigation. Meanwhile, from my experience, I am inclined to think that there will be little force in such an objection. No doubt the recovery has been very slow in many instances; but the same may be said of amputations. It is well known that stumps occasionally do not heal for six or twelve months, or even a longer date. Such also is the occasional history of resection of the elbow. Such also seems likely to be the case in certain instances of resection of the knee. I have, however, seen a patient, after this latter operation, stand on his own leg within three months, and within six months walk in a more efficient manner than I ever saw any one in the same time make use of an artificial limb. The wound is a very difficult one to heal, and, I believe, from what I have heard, that the unfortunate result of some of the cases has arisen from defective after-treatment. When better surgery prevails in this respect, it is probable that we shall have more satisfactory results.

"There are some features in favour of the operation (as I imagine) which have never yet been alluded to, and which I think deserve great attention, viz., the comparatively small amount of hemorrhage; the immunity (comparatively) from secondary hemorrhage, and the comparatively small size of the wound.

"As to hemorrhage, a tourniquet is not required, no main vessel is cut, and the loss of blood from the small vessels around the knee is of little consequence. Certainly, in some instances, there has been a formidable oozing within the first six or eight hours (intermediary hemorrhage, as it is often called), but I doubt if any harm has ever arisen from this. In one of my own most successful cases, this happened, but no evil resulted, and the progress of the case was satisfactory in the extreme. The question of secondary hemorrhage I think of great importance; it is an occurrence that could not possibly take place in this operation; the size of the wound I believe to be less than in amputation; possibly the greater extent of osseous surface may modify this view. It does not appear, however, that the end of the tibia is prone to disease after this operation; the end of the femur suffers most frequently, just as is occasionally seen after amputations low down in the thigh.

"If there be any force in the modern dogma regarding amputation, 'the further from the trunk, the safer the operation,' I suppose the rule would hold good as regards resections and wounds generally; if so, a resection of the knee-joint, being farther from the body than an amputation, should with those who hold the above doctrine be a guarantee for the propriety of the proceeding.

"There is one feature in the modern history of this operation which I think deserves special notice, viz., the frequency with which it has been practised within the brief period of a few years. Few of the great operations in surgery have so speedily attracted attention from independent members of the profession; this, doubtless, arises from the feeling of 'conservatism' which is abroad, as also from that which first actuated me in reviving it: that it had not been sufficiently tried to afford us the data on which to found an accurate decision as to its advantages or otherwise in comparison with the mutilation of amputation in the thigh."—*Dublin Quarterly Journal, Feb.* 1857, *p.* 1.

40.—*On Amputation at the Knee-Joint.*—[This operation, at present rare in this country, has been very highly spoken of by Velpeau and other continental surgeons. It was lately performed by Mr. FERGUSSON at King's College Hospital.]

The patient was a young lad, who had necrosis of the tibia, from whom he removed a large piece of bone two weeks before; the inflammation, however, extended to the knee-joint, which became filled with pus, and a portion of the head of the tibia had already exfoliated, thus showing that this process does occur in this situation, although denied by some writers. The amputation was performed by cutting across the front of the joint in a lunated course, making incisions at either side of the tibia, dissecting the skin off, and then forming a large and long flap underneath. This was absolutely necessary, Mr. Fergusson remarked, as the condyles of the femur were so wide, and required a wide flap to cover them. He then sawed off a slice of the articulating surface of the condyles. Although very rare in London, this form of amputation has been done by Mr. Fergusson several times, and he believes of all the thigh amputations that it really is the best, as such a good flap and stump are obtained. This case we watched with some interest; the stump has perfectly healed, and the boy is walking about the wards, and we have no doubt it will turn out as well as it looks, a firm, strong, excellent stump, as good a one as may be seen after any amputation.—*Lancet, Feb.* 28, 1857, *p.* 215.

41.—RESECTION OF THE ELBOW-JOINT BY A SINGLE LONG INCISION.

(Cases under the care of Mr. PAGET, Mr. FERGUSSON, and Mr. ERICHSEN.)

The adoption of the single incision in resections of the elbow-joint, which has been done almost simultaneously by three of our London surgeons, appears to be an important simplification of the former methods. It has been repeatedly shown on the dead subject since 1853 by Mr. Spencer Wells. The old plan, and that yet used by many surgeons, was by incisions in the form of the letter H; then it was found the long cut on the radial border of the joint might be dispensed with, and that a ⊢ shaped one gave ample room. The last improvement, and one for which we are indebted to Langenbeck, is the omission of the cross cut also. The last-named surgeon has, for many years been accustomed to operate by means of a single long incision on the inner edge of the ulna, and asserts that the lateral separation of the soft parts thus afforded gives ample space for the operation, while, as must be apparent, it leaves the bones much better covered, and the wound a much smaller one than would otherwise be the case. A house-surgeon of M. Langenbeck's being in London visited most of the hospitals, and mentioned to the surgeons his preceptor's practice; hence its adoption early last October by three surgeons within a week or two of each other. Mr. Paget was, we believe, the first. His case was that of a young man whose left elbow was the seat of old disease. There were large scars of former incisions, numerous sinuses, from which the discharge was profuse, and very great thickening of the soft parts. The ligaments and other structures around the joint were all in a pulpy condition, and no division of them with the knife was required. The ends of the diseased bones were readily turned into the wound, and sawn away with a key-hole saw, cutting from before backwards. The incision was necessarily a long one, and from the infiltration of the soft parts, much gaping of the wound occurred, but not nearly so much as there would have been had the transverse incision been practised. The case is doing well, the swelling is subsiding, and the healing process slowly progressing. Mr. Fergusson's patient was a girl, aged 11, the operation being done on October 4th. The disease was of eight months' standing; there were several open sinuses, and much surrounding thickening of parts. The healing was rapid, and is now nearly complete; fair motion having been obtained. Mr. Erichsen's patient was an old man of 63, whose left elbow had for six years been the seat of disease. Some pieces of necrosed bone had beed removed; but the disease persisting, it was determined to resect. The operation was done on Oct. 16th, and, in spite of two attacks of erysipelas, the healing has gone on most rapidly. At present, excepting one small sinus, it is complete. The man is able to go about, and is much improving in health. The elbow has fair motion, and all thickening of parts has subsided. We may add, that in these cases the operators all express themselves as highly pleased with the new mode of operating, and quite intend to employ it in future cases. There can be little doubt but that in the latter two cases, the last especially, the healing process has been very much more speedy than it would have been had a transverse incision also been made.

It may, perhaps, be questioned whether there is not a class of cases in which a more free exposure of the back of the joint than the single longitudinal incision would permit of would be desirable. Granting that it is a great improvement in those in which the ligaments have been softened and easily give way, and that it may also be easily performed on the dead subject, it may yet be open to doubt whether the operation would not be expedited by a cross-incision in those cases in which, from recent and acute inflammation there is great swelling, the ligaments yet remaining sound, and requiring division with the scalpel. The writer in a case of this kind once experienced some hindrance even with the ⊢ incision, from the great thickness of the parts cut and the difficulty of sufficiently reflecting the œdematous angles of skin, which were fully an inch and a-half in depth. For cases of this kind the old ⊢⊣ incision will probably remain preferable to either of the other modes. They are, however, quite unusual.—*Med. Times and Gazette, Dec.* 13, 1856, *p.* 593.

42.—*On Excision of the Hip-Joint.* By John Erichsen, Esq., Professor of Surgery at University College, and Surgeon to the Hospital.—There are three distinct forms of hip-joint disease, one commencing in the soft structures of the joint, the other in the pelvic bones, and the third in the femur. This division is founded in Nature, and it has an important practical bearing on the operation of excision, which is unnecessary in the first variety of the disease, improper in the second, and only requisite, in the third, in those instances in which Nature fails to effect a cure.

The operation of excision of the hip-joint, or more properly of the head of the femur, for the whole of the joint—that is to say, the cavity of the acetabulum, as well as the head of the femur, can never be removed—is a simple one. It consists in making an oblique T-shaped incision over the dislocated head of the bone, clearing this of the surrounding soft parts, turning it out by adducting and pushing back the thigh, and then removing it either with a saw or cutting pliers. I have used both in these operations, but prefer the saw. In the last case, in which I lately operated, I found great advantage from the saw invented by an excellent Dublin surgeon, Mr. Butcher, the blade of which was passed behind the bone, and then being turned by a screw in a horizontal direction, readily removed the head and trochanters.

The principle on which excision of the head of the femur is practised is twofold: first, to remove a mass of carious bone, which, by its irritation, keeps up hectic, and will ultimately destroy the life of the patient; and secondly, by taking away carious bone that is insusceptible of anchylosis, to establish firm union between the clean cut surface of healthy bone and the side of the pelvis, and thus restore a useful limb to the patient.

In excising a carious head of the femur, the first object we have in view is the preservation of the patient's life. It is a rule in surgery, that whenever a patient's strength is being worn out by the hectic consequent upon suppuration resulting from carious bone, the cause of the constitutional disturbance, the diseased osseous tissue, should, if possible, be removed. It is, therefore, as much in accordance with sound surgery to remove the carious head of the thigh-bone, when its presence is threatening the patient's life, as it is to amputate for caries of the tarsal bones, or to excise a diseased elbow, under similar circumstances. In fact, in extreme cases of *femoral* coxalgia, the surgeon has to choose between standing by inactively and seeing his patient gradually sink exhausted by the suppuration resulting from the diseased head of the femur, or, by excising this carious structure, removing the cause of the wasting discharge, and thus averting a fatal termination. It is true that there would be another alternative—viz., amputation at the hip-joint, but I am not aware that the most strenuous opponent of excision of the hip has ventured to advocate such a proceeding in preference to the operation we have been discussing.

There is, however, another object besides saving the patient's life, to be attained by excision of the head of the femur. It is the restoration of a tolerably useful though necessarily a shortened limb, The shortening of the limb that is left is not, however, the result of the operation; it has already taken place as a consequence of dislocation on to the dorsum ilii before the head of the bone is removed. As a small portion of the upper end of the femur merely is excised, never more than what projects beyond the acetabulum, the already existing diminution in length is not increased by the operation.

After the operation the limb should be put on a long splint, bracketted opposite the wound. No perineal band should be applied to the injured side, but the splint may be connected with one attached to a leather case put round the sound thigh, from which extension is to be made.—*Lancet, March* 28, 1857, *p.* 311.

43.—ON INCISIONS INTO JOINTS.

By John Gay, Esq. (Read before the Medical Society of London.)

Mr. Gay commenced his paper by remarking, that three years ago he brought before the profession, through the medium of this Society, a method of treating certain forms of articular disease by free incisions into the affected cavities; but that since that period his experience of this treatment had led him somewhat to modify his views, and had enabled him with more distinctness to define the particular forms and stages of disease for which it is more especially adapted. His object in making incisions was not merely to evacuate matter, as in the case of an ordinary abscess, and as this proceeding has been adopted and recommended by others; but as well, and even chiefly, for the purposes of allowing the more ready escape of cartilaginous or bony *débris*—often a cause of destructive irritation to a joint—and of setting up reparative action by making a closed or partially closed and diseased sac a part of a large and externally communicating wound. The results of his experience, as that of many of his professional brethren who had adopted his views, had been still more to convince him that free incisions were of the greatest value in those forms of disease to which they were appropriate, inasmuch as they bring the diseased processes to an equally speedy determination as after resection of the joint, and have the greater merit of leaving the flesh less mutilated, and the joint often almost as useful as before. Moreover, the incisions are often comparatively harmless, and, in case of failure, do not lessen the chance of restoring the limb that resection, or other measures of a graver nature, might afford. Mr. Gay then narrated a series of cases. The first, that of a lady, aged 43, who had suffered for three years from all the symptoms of disease of the cartilage and bony structures of the knee-joint, and had come to have the limb amputated. On making an incision into the joint, which Mr. Gay did, with the assistance of Mr. Stephens, over the seat of the principal pain, a small quantity of sero-purulent fluid trickled out with the blood. On examining the interior of the joint carefully, the cartilage was found to be entire, but slightly uneven, leading to the conclusion that the affection commenced in the synovial capsule, and had not seriously implicated other structures. The intense pain from which this lady suffered, especially at night, prior to the operation, was completely relieved by it ; and, with the exception of a rigor on the day following, succeeded by slight fever, which soon yielded to treatment, not a bad symptom followed. The capsule soon healed, and in a month the patient began to walk about. She has since enjoyed the perfect use of her limb. The second was a case of hip-joint disease of three years' standing. A sinus, having two external openings. led into the joint. The limb was bent upon the trunk, and the joint still flexible, but with great pain. The discharge had almost ceased, and the diseased action appeared to be almost stationary, and had been so for several months. The joint was fairly opened by enlarging the sinus; the head of the bone had been partially removed, and was bare. The joint recovered completely after fourteen weeks, with considerable mobility, quite enough to make the limb useful. The third case, of strumous disease of the articular cartilages of the knee-joint, of long standing, in a boy nine years old ; the pain was severe, and the discharge profuse. The incision did not answer in this case, the disease making progress subsequently, as though pursuing its natural course, with the addition of a severe wound, which refused to heal. The fourth case, of "strumous" disease of the knee-joint of three years' standing, in a girl twelve years of age. The joint was greatly distended, and had been so for more than six months. It was opened, a considerable quantity of sero-purulent fluid exuded, and, in defiance of every attempt to keep it open, the wound healed in three weeks, leaving the joint in the same condition as before. It was opened again after six weeks, and from this time the course of the the disease was onwards, and removal of cartilages and caries of the ends of the bones, attended with profuse discharge, and failure of health and strength. The treatment in this case was of no avail, and Mr. Gay had at last to amputate the limb. The articular ends of both bones were carious, and the spongy texture of the bones intensely inflamed for some distance along their respective shafts. No traces of tubercle, but small deposits of pus in those parts of the bone where the inflammation was most severe. The fifth case, a woman, aged 62. for disease of the joint belonging to the phalanx of the forefinger. It had existed six months, and remained stationary. The joint was quite loose, and grated when moved, also painful. A free incision on each side, and keeping the wounds plugged, led to speedy anchylosis. The sixth and seventh cases were of hip-joint disease in children, of 7 and 8 years of age respectively. The disease in both cases was in its early stages, and in one only had a sinus been formed. Mr. Gay opened the joints freely, but with somewhat varied results. In both fresh abscesses formed, and burst on the front of the thigh. In one, severe pain in the knee-joint followed, which could only be palliated by blisters, mustard poultices, and opium; in the other, symptoms of rapid pulmonary phthisis. These, however, subsequently yielded, and in both cases, after some weeks, the joint disease relapsed into its ordinary forms, the discharge in each being profuse, and the health bad. The incisions in these cases were useless. The last case was of a lad, aged 12, who had symptoms of subacute inflammation of the knee-joint. After three weeks of severe pain, an opening was made into the joint, and some matter passed away. This did not give much relief. The wound ulcerated, and soon after an opening formed spontaneously, nearly two inches from the first, and led into the joint. Very little matter exuded, and the joint continued extremely painful. Some white (apparently) sloughy matter could be seen through these openings. Chloroform was given, and the joint laid open by an incision, which passed through the two sinuses, and a large "pus-clot" was removed, which appeared to have filled the joint to painful distension. Suppuration followed, and the joint rapidly recovered, the lad being able, in six weeks, to move about by means of a stick, and the joint being entire. There were no indications of bone-disease in this case. After making comparisons between these several cases, the author drew the following practical conclusions:—That joints might be opened with advantage, 1st. In cases of chronic inflammation of the synovial capsule of a joint, with effusion into its cavity, and pain; especially if these symptoms shall have been of long standing, have resisted ordinary remedies, and are associated with marks of declining health, as in the first case. 2nd. In cases of acute or subacute synovitis, where the symptoms are unusually severe, and the external coverings of the joint indicate a tendency to ulceration; or where, after a reasonable period, the symptoms do not remit, but indicate the existence within the joint of matter, which, from its becoming a source of irritation, threatens to produce more serious mischief, as in the eighth case. 3rd. In cases where the joint is occupied by bony or cartilaginous *débris*, which, from the small size of existing sinuses, cannot find exit; and 4th. In cases of carious disease of the bones, in which, from diminution of pain and secretion, as well as from other confirmatory symptoms, the disease in which the local affection has originated, shall appear to have exhausted itself, as in the second and fifth cases. He (Mr. Gay) condemned the practice (except for the purpose of relieving severe pain) in all cases in which a chance remains that the joint will recover without, and especially in what are termed "strumous" affections of the joints, so long as the continuance of profuse discharge indicates that the constitutional disorder, in which it is presumed to have originated, has not burnt out; and in the event of this becoming exhausted, only when the persistence of sinuses but slightly discharging beyond a reasonable time might lead the surgeon to suspect the existence within the joint of some dead and irritant matter, or the want of some general stimulus to final and reparative action, which, connecting a diseased sac with an external wound, would supply.

[Mr. Henry Smith said that he had adopted Mr. Gay's plan with considerable success, never having seen any evil effects from the treatment. Small openings into suppurating joints should be discountenanced.]

Mr. Hancock said, the system propounded appeared to be only successful in those instances in which, in consequence of the long duration of the disease, the actual structure of the joints had become so changed as to diminish the danger of opening into their cavity. Where the disease was recent and progressing, so far from the opening giving relief, it appeared to be attended with an aggravation of the symptoms. Such had been the result of his own experience. He had been willing to give the system a trial, but he thought he had done great mischief by following it. The cases in which Mr. Gay had made incisions into the sinuses connected with the hip-joint would get well by counter-irritation and constitutional treatment. The practice of incising small joints was followed by Mr. Lynn twenty-five years ago; such incisions might be usefully made in fingers, whose entire removal was rarely necessary.—*Med. Times and Gazette, Oct. 25, 1856, p.* 429.

44.—ON DISARTICULATION OF THE SCAPULA FROM THE SHOULDER-JOINT.

By Professor Syme, Edinburgh, (Read before the Royal Medical and Chirurgical Society.)

Janet S—, nearly seventy years of age, was admitted into the Royal Infirmary of Edinburgh, on the 18th of September, 1856, on account of a large tumour involving the left scapula. In size and form it resembled a cocoa-nut. In some parts it was as hard as bone; in others, elastic but firm. It presented a distinct bruit, and communicated a strong pulsatory movement. The tumour was first noticed about six months before, when it was the size of an orange. Considering, on the one hand, that the extension of the growth into the axilla rendered relief by a partial removal of the bone impossible,—the unsatisfactory result of that operation in Mr. Liston's recorded case,—the fearful mutilation which it would involve,—and the small hope of a successful issue to so formidable a procedure at her advanced age; whilst, on the other hand, the chief obstacles to recovery seemed likely to be serious hemorrhage, (which it was thought might be prevented,) or excessive drain upon the patient's strength in the subsequent suppuration,—Mr. Syme determined to remove the entire bone. This was done as follows: an incision was made from the acromion process transversely to the posterior edge of the bone, and another from the centre of the first directly downwards below the lower margin of the tumour. The flaps thus formed were then reflected. The scapular attachment of the deltoid, and the connexions of the acromial end of the clavicle were next divided. With a view to prevent the most serious source of hemorrhage, the subscapular artery was next cut across, and secured. The joint and circumference of the glenoid cavity were next divided; the finger being hooked under the coracoid process greatly facilitated the division of its attachments. and enabled the operator to pull back the bone, and separate its remaining attachments with rapid strokes of the knife. The limb was supported and retained in situ by a bandage. The tumour, on examination, was found to consist of a nearly uniform expansion of the bone into a bag, partly membranous, partly osseous, containing a cerebriform growth, and extended to the margin of the glenoid cavity and spine of the bone. All seemed to promise well after the operation; the wound healed rapidly. At the end of a fortnight the amount of discharge was scarcely sufficient to stain the bandage. The shoulder assumed a very natural appearance, and it seemed that by the support afforded by the clavicular portion of the deltoid, together with the action of the pectoralis and latissimus dorsi, the limb would be able to execute a fair degree of motion,—indeed, the woman was with difficulty prevented using the limb too freely; but the patient's strength did not improve in a corresponding degree, and towards the end of November she suddenly sank, and died on the first day of December. The author concluded with the expression of a hope that this case would tend to encourage greater freedom in operating for diseases of the shoulder-joint as well as scapula, proving, as it did, that the scapula may be removed without serious less of blood; that the resulting wound does not necessarily occasion excessive discharge, and that the arm becomes afterwards a serviceable limb.

Mr. Syme observed, that it appeared to him remarkable that after the removal of the scapula the arm should still be useful; and on this ground, that the case would be interesting to the Society. It was still more surprising, that the removal of the clavicle should not produce any alteration in the position of the shoulder, or interfere with the motion of the arm; yet this was the fact in a case in which he had operated. There was, in truth, no difference between one arm and the other. Many things which appeared *à priori* impossible, were not really so. Other cases of tumour of the scapula were also fit for the operation he had performed. He mentioned one in particular which had come under the care of the late Mr. Liston, who wished to amputate the scapula, but could not get any other surgeons to countenance the proceeding.—*Lancet, March* 7, 1857, *p.* 243.

45.—AMERICAN SPLINTS, FOR FRACTURES OF THE FEMUR.

By P. B. MANSFIELD, Esq., R.N.

[The splint here described is very extensively used throughout the United States, and is found to answer every purpose admirably.]

A long splint, something narrower than Dessault's, well padded, and fitted exactly as a crutch, extends from the axilla to five or six inches below the external malleolus. It is confined in the usual way, to the body, by a very wide duck belt.

On the inner side, a shorter splint, extends from the perinæum, where it fits most exactly and easily, downwards, to the same distance below the foot as the outer splint.

These splints are connected by three thin iron bridges, capable of being bent, so as to allow of the splints being approximated, when necessary, or of being drawn apart, to give room for opening the Scultetus bandage, in cases of compound fracture. They also (a point of great importance) form an excellent cradle, and protect the leg from pressure of the bed-clothes, as well as support it.

At the *ends*, the splints are connected permanently by means of "a crosspiece," which keeps them wide enough apart to prevent pressure on either ankle, and to allow space enough for padding, of which there is an ample supply inside each splint,

A wide strap of adhesive plaster (spread on strong duck) is applied to the leg (before the bandage), commencing at the knee-joint, on either side; it is continued downwards, and leaving a *loop* of two or three inches under the sole, is taken up on the other side, to the point corresponding to that from which it started. This loop, when the splint is adjusted, should reach to within three or four inches of the "*crosspiece*," around *which*, and through the *loop*, is passed a piece of bandage; this being knotted, draws the "loop" as near the "crosspiece" as possible.

A piece of wood to form a handle, is now placed between the piece of bandage and the "crosspiece," which an *assistant*, twisting, and using traction at the same time, causes the bandage to shorten so much, that a gentle and steady extension is made while the surgeon coapts the fractured parts with great facility, and but little pain to the patient.

The handle can be easily prevented from untwisting, by simply tying it down on the "crosspiece;" and even if, by the stretching of the plaster or bandage, the leg should shorten a little, a few *twists* of the handle will set all to rights again, without any trouble. I might suggest that a plain leather *strap* and *buckle*, passed round the "loop" and "crosspiece," with a good number of holes, placed near each other, might be substituted for the handle and bandage.

Being, I may say, comparatively unknown at home, its novelty, as well as utility, and means of comfort to the patient, may make it a not unsuitable subject of a note for your valuable journal. The points in its favour are, that it makes "extension" and "counter-extension" easy, certain, and attended with very little pain, whilst coaptation can be nicely performed; all this is accomplished almost *at once* and effectually, and frequent disturbance is rendered unnecessary. Lastly, extension is made from the *entire* leg, instead of the *instep;* the "crosspiece" protects *both* ankles from pressure; and the axilla, becoming a *second* fulcrum, relieves the perineum to a very great extent.—*Dublin Hospital Gazette, March* 15, 1857, *p.* 87.

46.—*Reduction of old Dislocation of the Humerus by Manipular Movements, without Extension.*—In a case recently under his care in St. Bartholomew's, in which a very fat woman was the patient, Mr. WORMALD succeeded in reducing an old (six weeks) dislocation of the humerus by manipular movements, without extension, on the principle now almost universally adopted with those of the femur. The humerus differs from the femur in having an almost straight shaft up to its articular end, and no leverage can therefore be obtained, as in the case of the head of the femur, which is almost at right angles to its shaft. By bandaging a rectangular splint to the arm and forearm, Mr. Wormald made the latter into a lever, by which to act upon the former. The operator's knee being put under the patient's elbow as a fulcrum, the forearm was depressed, and the bone lifted into its place. The patient was under chloroform, and reduction occupied only about ten minutes. For ordinary cases this plan will, of course, not supersede the very simple and effectual ones already in use, but in those difficult of reduction is worth being had recourse to.—*Med. Times and Gazette, Feb.* 7, 1857, *p.* 141.

47.—*Phosphate of Lime in Spinal Curvature.* By M. PIORRY.—M. Piorry states that he has long been in the habit of administering phosphate of lime with advantage to rickety patients, suffering from curvature of the spinal column. He gives it in the form of very fine filings of fresh bones. About one ounce is given daily, either in milk, or better still in rice-milk, which effectually disguises all disagreeable taste. He does not attribute all the improvement observed to this, as a highly nutritious diet is simultaneously employed; but certain it is, that in several patients in whom the spinal column had continued to deviate more and more every year, and who were subjected during several months to good regimen, free exposure to light, a dry and warm temperature, and especially employing the phosphate, the progress of the affection has become completely arrested. And the numerous cases in which the treatment has proved of benefit in Potts' disease, suggest that it may be of great utility in the rickets of childhood, and to osteomalacia of adults. M. Piorry also believes it may prove useful in women threatened with the softening of the bones during pregnancy, combining it then with iron. Likewise children, when nutrition is defective and the limbs are distorted, may benefit by it; while in certain tuberculous subjects it may favour the process of calcification.—*Gaz. des Hôp.*—*Med. Times and Gazette, March* 14, 1857, *p.* 268.

48.—ON TENOTOMY.

By William Adams, Esq., Surgeon to the Royal Orthopædic Hospital.

[In all cases attended with any marked degree of ligamentous rigidity, the tendons should be divided in a certain order. In slight cases, the tendons may all be divided at one sitting; but Mr. Adams says that]

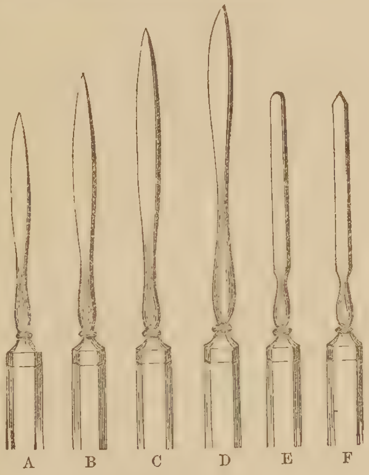
In all severe cases it is absolutely essential to divide the operative treatment into two stages; the second operation being performed after an interval of a few weeks or months, according to the age of the patient and the severity of the case. The great practical point is to overcome the inversion of the anterior portion of the foot; or, in other words, to convert the varus into equinus, and thus reduce a compound to a simple deformity, before dividing the tendo-Achillis. With this view, therefore, we divide at the first operation the tendons of the tibialis anticus, tibialis posticus, and flexor longus digitorum, and then evert the foot by mechanical means. The practice at the hospital is to divide the tibialis posticus and flexor longus first, because, if the artery should be wounded, the treatment will be prolonged; but when the anterior tibial is much contracted, I prefer dividing this tendon first, because I think more satisfactory evidence is then obtained of the division of the posterior tibial. There is no greater error in the treatment of severe varus, or one more frequently committed by surgeons of the present day, than the division of the tendo-Achillis at the first operation, either by itself, as is frequently done, or conjointly with the division of the other tendons. By such a proceeding, too many objects have to be accomplished at the same time by mechanical means, and failure in some of them usually results—eversion of the foot is imperfectly obtained; depression of the os calcis is also imperfectly obtained, and relapse of the deformity rendered certain. It is now, therefore, an established rule in Orthopædic practice that the tendo-Achillis should be the last tendon divided, and that its division should be delayed till the equinus alone remains to be cured.

The plantar fascia, if but slightly contracted, may be divided either at the first or second operation, provided that a Scarpa's Shoe be used for the mechanical treatment; the general practice at the Orthopædic Hospital is to divide the plantar fascia and the tendo-Achillis together at the second operation. However, I would recommend that when the plantar fascia is much contracted, causing an obvious shortening of the foot and increase in the convexity of the tarsus, its division should be made a separate stage in the treatment, and should be performed after the division of the tibial tendons and before the section of the tendo-

Achillis. It occurred to me that by so doing we might make use of the contracted condition of the tendo-Achillis in fixing the os calcis during the process of unfolding the longitudinal arch of the foot, by the application of pressure to the anterior part of the foot, in an uplifting direction. If the tendo-Achillis be divided at the same time as the plantar fascia, the foot must be elongated by direct pressure downwards on its tarsal convexity, a more painful and uncertain process than that which I have recommended.

Mode of performing the operations.—It is an established practice at the Orthopædic Hospital to divide all the tendons, and the plantar fascia from below upwards towards the skin. The knife is introduced obliquely downwards, with the flat surface parallel with the tendon to be divided. The point is then carried behind the tendon, as close to it as possible, and the handle of the knife depressed. The cutting-edge is now turned against the tendon, which, in infants, yields before a little direct pressure, the tendon being simultaneously made tense by an assistant who has charge of the foot. In older patients, and when the larger tendons are divided in children, a little cutting movement is required; but this is to be avoided, as much as possible, and a clean transverse section made. It is a great object to avoid disturbance of the surrounding parts, and the division should be made quickly, neatly, and with decision rather than force. The foot should be instantly restored to its deformed position by the assistant, so as to approximate the divided extremities of the tendon, and the knife withdrawn. The wound should be immediately covered by a compress of lint and a strip of adhesive plaster. Some observations which I made to you when describing the division of the tendo-Achillis for the cure of talipes equinus, are also applicable to the operations on the other tendons. The foot is then to be bandaged, and a softly-padded splint applied, so as to retain it in the deformed position; we use tinned-iron splints, which can be bent to any form previous to being applied. The foot must then remain undisturbed for three or four days. The objects of immediately applying a compress, and allowing it to remain a few days, are, 1st, to exclude the atmosphere from the wound, and, 2nd. to prevent extravasation of blood, and inflammatory exudation into the subcutaneous areolar tissue. The object of retaining the foot in its deformed position, is not that direct union may take place between the divided extremities of the tendon, and a material formed which may be subsequently elongated; but to insure perfect quiescence to the part, and thus diminish the chance of inflammation.

The *knives* which, in my opinion, are best adapted in size and form to the various operations of tenotomy, are represented in the Fig. I prefer the strong spear-pointed tenotome, the point corresponding to the centre of the blade, and the cutting-edge slightly convex, to the slender-pointed knife with a straight cutting edge, generally used at the Orthopædic Hospital. Slender points are apt to break in these operations, and this accident has occurred twice recently at one of the largest metropolitan hospitals. The backs should be rounded and strong, and it is equally essential that the knives should carry a very sharp edge, and be well-tempered, requisites not easily obtained; but it will be found that a strong tendon easily turns the edge of an inferior knife, and I have frequently seen the operator obliged to change his knife in the course of dividing such a tendon. The knives represented were made for me by Mr. Bigg, of St. Thomas's-street, and fully support the well-known character of the maker.



Tenotomy Knives.

A, B, C. Three sharp-pointed tenotomes. A, is quite large enough for division of the tendo-Achillis in children, but in adults B is required. C is useful for a deep tendo-Achillis in a fat leg.

D. A scalpel used for opening the sheath of the posterior tibial tendon. The point should be rather more rounded and the blade not wider than Fig. B

E. Blunt-pointed tenotome for dividing the posterior tibial tendon—drawn rather too narrow; it should be the width of Fig. B.

F. Tent-pointed tenotome The point is blunt on either side and should be rounded, though of angular form. It will penetrate cellular tissue, which E will not, and may be used with more freedom than the sharp point, where there may be a fear of wounding the vessels or nerves. It may be passed beneath the biceps tendon when displaced so as to lie over the peroneal nerve. Or with a longer blade it may be passed behind the sterno-mastoid muscle. Difficulty in forcing the round point through cellular tissue led me to adopt this form under some circumstances.

The anterior tibial tendon should be divided a little above its insertion, as it crosses the ankle-joint, the knife Fig. A or B being used, according to the age of the patient, and the point entered on the outer side of the tendon. This tendon can generally be easily felt, except in very fat infants, and in these cases more difficulty may be experienced than you might expect. The altered direction of the tendon to the inner side must be borne in mind, and when it cannot be felt with certainty, I have found the knife, Fig. F, very useful.

Method of dividing the tendons of the tibialis posticus and flexor longus digitorum muscles.—Having already given you an historical account of the different methods which have been adopted for the division of this important tendon, and stated that we now universally adopt the method first recommended by Dr. Little, it is only necessary for me to give you a practical description of this procedure, and a few hints which may be of service to you in performing this operation, which, in infants, is decidedly one of great difficulty. The first difficulty is in determining the exact point at which the puncture should be made; and the second is in satisfying yourself that the knife is really between the tendon and the bone, previous to making the section. In the leg of a fat infant, the inner malleolus can scarcely be well defined by the touch; but, if it can be made out, we puncture a little above it, just on the turn of the bone, where, in a severe case, the posterior tibial tendon is slightly prominent. There is no posterior edge to the tibia, as in a perfectly ossified bone; and, therefore, the exact point must be guessed. The altered relations of the tendon, which bear a constant relation to the severity of the deformity, as above explained, must be accurately kept in view. Take care to be forward enough. Taking the antero-posterior diameter of the leg, you may pretty safely puncture exactly in the centre, as described by Dr. Little, if the case be severe. Two knives are necessary—the scalpel, Fig. D., and the blunt-pointed knife, Fig. E. Thrust the scalpel straight down to the tendon, and, by a movement of the point, make an incision in the sheath, close to the bone. If you think this has been accomplished, withdraw the scalpel, and then enter the blunt-pointed knife, and be quite sure that you pass the point between the tendon and the bone. You must feel the knife locked, so that you cannot move it from side to side. If this sensation be not distinct, you may be sure you have missed the tendon. The knife should then be partially withdrawn, and used gently as a probe. In this way you may strike the tendon; and, if the blunt point will not pass behind it, the knife must be withdrawn, and the scalpel re-entered, to open the sheath. The blunt-pointed knife may then be again introduced, and will easily pass between the tendon and the bone. When you are satisfied that the knife is behind the posterior tibial tendon, it may be pushed a little deeper, with the object of including the tendon of the flexor longus digitorum, and then the cutting-edge must be turned towards the tendons, an assistant at the same time putting them on the stretch by everting the foot, or turning it towards its natural position. These tendons are often divided in this way, without any further movement of the knife, but a slight cutting movement may be required. The less the knife is moved, however, the better, for the sake of avoiding the posterior tibial artery, and the risk of subsequent inflammation. The posterior tibial artery is generally divided or wounded, when the point of the knife is moved about too freely, and lost in these movements to cut the tendon. I divided the artery several times before I arrived at this conclusion, but now it is an extremely rare occurrence with me. It is always a matter of uncertainty whether the knife has passed under the tendon of the flexor longus, as well as that of the posterior tibial; but though, in a severe case, it is very desirable to divide this tendon, it is of much less importance than the posterior tibial.

In the adult, and sometimes at younger ages, when the posterior tibial tendon can with certainty be felt externally, it may be divided with the sharp-pointed knife, which I have frequently seen done; but, as it is desirable to include the long flexor tendon, I do not advise this procedure. In infantile cases, it is decidedly dangerous and unsatisfactory, as compared with the method I have recommended.

Evidence of the division of these tendons.—An audible snap very rarely follows division of the posterior tibial tendon, either in the infant or adult; but a jerk, or sudden yielding of the foot, is generally felt by the assistant; so that if the operator be in doubt, an experienced assistant may confidently assert that the tendon has been divided. Usually, also, a distinct vibration is communicated to the hand of the operator; and, if the long flexor has been divided, as well as the posterior tibial, a sort of double-click vibration is felt. This is the most satisfactory evidence to the practised hand, and may with certainty be relied upon, even when the assistant has not felt any jerk or sudden yielding of the foot, which may be prevented by the ligamentous rigidity. Either of these events, therefore, will be conclusive as to the division having been accomplished; but one of them must be distinctly present.

In adult cases of varus, in which the tendon is generally very superficial, and can be distinctly felt previous to the operation, a depression can be felt between the divided extremities of the tendon. This also occurs sometimes in children and in infants when the leg is thin; but I need hardly say that this is quite the exception at young ages.

The difficulties connected with division of the tendons may be stated to arise from, 1st. The displacement of the tendons depending upon the deformity. 2nd. The difficulty in defining the situation of the tendons in the fat legs of infants; this applies especially to the anterior and posterior tibial tendons. 3rd. The abnormal insertion and distribution of tendons occasionally met with—such as the bifurcation of the anterior tibial tendon above described, &c. 4th. The abnormal distribution of the arteries. It once occurred to me to find, in a boy, aged 4 years, affected with varus in both feet, an artery of the size of the posterior tibial, pulsating exactly over the posterior tibial tendon in both legs. Mr. Lonsdale and myself discussed the propriety of attempting division of the tendon below the malleolus; but, from the severity of the case, the tendon could not be felt in this situation when the foot was everted. I therefore divided the tendon with extreme caution above the malleolus, and without wounding the artery in either foot.

Accidents connected with division of the tendons.—The following untoward events may occur, either at the time or as the immediate consequences of the operations I have described to you:—

1st. *Division of the skin, so as to make an open wound at the time of dividing the tendons.*—This is most apt to occur during the division of the tendo-Achillis, when adhesions to the skin exist after a previous operation. Under these circumstances, the usual indications of the division of this tendon, viz., a sudden jerk or yielding of the foot, and an audible snap, do not occur; and the operator, thinking the tendon is not completely divided, carries his knife forwards too boldly. In non-congenital spasmodic deformities, a risk of this accident occurs when a violent muscular contraction is suddenly induced, as I have witnessed on several occasions, during the operation; but then an experienced assistant ought to prevent the accident by restraining the flexion of the foot. If an open wound should be accidentally made, the foot should be instantly extended; the wound, covered with dry lint, retained in position by strips of adhesive plaster, and the foot bandaged in its extended position to a splint, applied in front of the ankle-joint; so it should remain for several days, unless pain and inflammation supervene. The wound will sometimes heal by the first intention, but very formidable inflammation and suppuration in the course of the tendon may occur.

2nd. *Suppurative inflammation in the sheath of the divided tendon and surrounding cellular tissue.*—This is most apt to follow the operations on the deeper tendons, especially the posterior tibial, because of the difficulty sometimes experienced; but I have never known it occur, except as the result of a clumsy operation. The well-known freedom from inflammation which characterizes subcutaneous operations has led some surgeons to think too lightly of these operations, and disregard the precautions necessary to prevent inflammation above described. From such neglect I have witnessed, in one of our largest Metropolitan Hospitals, suppuration extending up to the popliteal space in one instance, and half-way up the leg in another. The late Mr. Wilson, of Manchester, told me that he once amputated a leg at the thigh, in consequence of suppuration in the popliteal space following division of the hamstring tendons.

3rd. *Wounds of arteries.*—There are two important arteries in the foot liable to be wounded in the operations for varus, viz., the posterior tibial and the internal plantar arteries, both of which have been repeatedly wounded, and occasionally with very serious results.

a. *Wound of the posterior tibial artery.*—If this artery should be wounded in the operation for dividing the posterior tibial tendon, the accident will be at once indicated by the arterial jet from the wound, and by the immediate blanching of the foot. The latter indication may be relied upon when the arterial character of the hemorrhage is doubtful, as sometimes occurs in fat children. Pressure must be immediately applied by means of a graduated compress and bandage, and maintained for two or three weeks, the pressure being modified occasionally to prevent slough, which occurred in one of my cases through the mother neglecting to bring her child to the Hospital. I have never seen pressure fail if well applied and attended to; and so much confidence in its succes do I feel from having witnessed many cases—perhaps from fifteen to twenty in all—that I would rather cut the artery in a severe infantile case, than miss the tendon, without the division of which there is no hope of curing a severe case. When the artery is supposed only to have been punctured, it has been recommended to re-introduce the knife and completely divide it; but if the blunt-pointed knife be used, its divison will, probably, be complete at the time of the accident.

b. *Wound of the internal plantar artery.*—This accident is apt to occur during the division of the plantar fascia, and as the sharp-pointed knife is used, the artery is more liable to be punctured than divided. It may, therefore, be safer practice to make complete division of the artery, although this plan has not been adopted in the cases in which I have seen the accident occur—all of them have been in children, and the artery has probably been completely divided at the time—and, with the immediate application of firm pressure, they have terminated successfully.

4th. *False aneurism.*—Mr. Tamplin, in 1846, relates two cases of false aneurism as having occurred at the Orthopædic Hospital up to that date, from puncture of the artery; "in both false aneurism was the result, and in both was it necessary to cut down upon and tie the vessel. The first was a puncture of the posterior tibial, and the other of the internal plantar artery, in a boy 11 years of age." The operations were very formidable, from the depth and small size of the arteries, but both cases terminated favourably. In my own practice I have had two cases in which a diffused pulsation was observed in a few days after the operation for dividing the posterior tibial tendon, and a small false aneurism had probably formed, but in both it was completely removed by well-regulated pressure; subsequently I divided the tendo-Achillis in each case, and both did well. A more defined pulsation occurred in a child operated upon by Mr. Tamplin about a year ago. I detected the pulsation in this case at the time when Mr. Tamplin was about to divide the tendo-Achillis. No external tumour had formed. Mr. Green happened to be present, and agreed as to the probable existence of a false aneurism. Division of the tendon was delayed, and the case treated by pressure. No diminution in the pulsation occurred for a long time, and I think the pressure was continued for three or four months. The pulsation had then entirely disappeared, and Mr. Tamplin divided the tendo-Achillis, and cured the deformity. The case remained well.

A less fortunate case occurred in my own practice. On April 13, 1853, I wounded (divided?) the posterior tibial artery in a child seven weeks old. The blunt-pointed knife (Fig. E) was used, and I was not aware of the accident at the time of the operation. As neither the arterial jet nor the sudden blanching of the foot indicated the mischief, the artery was probably only wounded. Ten days after the operation a deep pulsating tumour was discovered. Direct pressure by a graduated compress and bandage was applied, and the pulsation diminished, but a very small slough formed, in consequence of the pressure not being relieved for four days, from the neglect of the mother to attend, and a copious arterial hemorrhage took place. Pressure a little above the aneurism appeared to command the bleeding, and was, therefore, tried, but was discontinued on the second day from the extension of the swelling to this part of the leg. A second arterial jet followed the removal of this pressure. On May 12. 1853, I injected from five to ten drops of the concentrated solution of perchloride of iron, as recommended by M. Pravaz, of Lyons, into the centre of the aneurism, which was probably about an inch in diameter. At the time of the injection, loosely clotted blood plugged the small cutaneous ulcer, through which the extremity of a long and finely-pointed glass syringe containing the styptic was introduced and carried to some depth. The femoral artery was compressed by Mr. Lonsdale before the injection and for five minutes afterwards, so as to insure the blood acted upon being as nearly as possible in a stagnant condition, a most essential point. The first effect observed was that the loosely clotted blood filling the cutaneous ulcer became firmer, and that from ten to twenty minims of straw-coloured serum oozed through the ulcer, affording conclusive physiological evidence of the firm coagulation of the blood, which was also indicated by a general feeling of hardness over the sac. A piece of lint and light bandage were applied. On the next day the cutaneous ulcer was seen to be contracted and plugged with a firm black clot. The surrounding skin, which, previous to the operation, had presented a tense, shiny, swollen, and slightly reddened appearance, was now pale, and less tumefied. The aspect of the limb was remarkably changed, and it seemed that a process of shrinking and contraction had commenced, and that no inflammatory results need be apprehended. Progressive improvement took place; the ulcer healed in a week, and shrinking and contraction advanced. On May 25, a deep, puckered cicatrix, and a little deep-seated induration alone indicated the former seat of the aneurism. The treatment of the deformity was then proceeded with; the tendo-Achillis was divided on June 1, and the restoration of the foot was in a few weeks as complete as in other cases. The operation of tying the posterior tibial artery in this case would, probably, have been fatal to the child, which was much exhausted by the hemorrhage, and the limb was in a very unfavourable condition. The success which attended the injection of perchloride of iron has induced me to give you the particulars of this case, which has not hitherto been published, although it was read at the Medical and Chirurgical Society on June 28, 1853. Although I believe it was the first case of aneurism, and so far as I know, the only case up to the present time, treated upon this principle in this country, it was not thought to be of sufficient importance to be published in the Transactions of the Medical and Chirurgical Society; but, nevertheless, I would recommend you to adopt this method of procedure under similar circumstances. The styptic is a valuable one, if used under the conditions recommended by M. Pravaz. If brought into contact with blood only, its extraordinary coagulating power may be relied upon, and was admirably illustrated in the present case; but if applied to living tissues it is certain, from its caustic properties, to produce slough and inflammation—you might almost as well use strong muriatic acid. Surgeons appear to have employed this styptic in ignorance of the fact that it is an acid salt; it has always an acid reaction, and contains an uncertain quantity of free muriatic acid of the strongest kind. It has generally been used by drams instead of drops, and applied to vascular tissues, such as nævi, the surfaces of open wounds, &c.; and thus, while its caustic properties have been frequently, and, it is to be regretted, fatally, demonstrated, its valuable properties as a simple coagulant of blood have been entirely overlooked, and the remedy, by its misuse, brought into disuse.—*Med. Times and Gazette, Dec.* 6, 1856, *p.* 561.

49.—ON THE USE OF THE ECRASEUR.

By Dr. George H. B. Macleod, Surgeon to the General Hospital in Camp before Sebastopol.

It may be said generally that the chief aim of the écraseur is to supplant the ligature; and that it fulfils all the objects aimed at by the ligature in a more rapid and satisfactory manner constitutes its claims to the attention of the Profession. Its latitude of action, too, it will be seen, is much greater than that of any ligature we possess, A comparison of it with the ligature may be stated thus:—In obviating hemorrhage it at least stands on an equality with the ligature, as it is found so "hermetically and solidly" to close the vessels before dividing them, by an action on their coats similar to that of the ligature, that, though I have repeatedly seen the most vascular growths removed by it, I have never, except in one solitary case, seen a drop of hemorrhage. As to the speed of action, it is greatly preferable to the ligature, which has to ulcerate its way through a tumour by a process slow and tedious enough, its very slowness being essential to its success. Further, the ligature requires, in general, tightening, causes great pain and irritation, and leaves a large suppurating surface. The écraseur, on the contrary, so compresses the parts, that the resulting raw surface is of very limited dimensions. It enables us to administer chloroform during the whole proceeding, and thus to obviate pain; and, finally, it puts in our power an amount of force unknown in any ligature we possess. In the case of nervous persons or young children, the speed with which it acts, in comparison with the ligature, holds out many advantages. In a word, it in a great measure combines the benefits of the knife and the ligature. In its results, too, the écraseur contrasts advantageously with the ligature. Without claiming for it the advantages of causing greatly less subsequent inflammation and suppuration, of never being followed by erysipelas, or hospital gangrene, or tetanus, or purulent absorption, as is so energetically declared by Chassaignac, still I must honestly confess that the disturbance caused by it has been in general very slight, and the disagreeable results few, in the cases I have had an opportunity of observing. The mode in which the vessels are closed may well be considered to form a barrier to purulent absorption.

The essential step necessary in using the écraseur is, obviously to form a peduncle, if the part to be removed do not already present one. This is accomplished in various ways, according to the nature of the part. If, as in tumours on the surface, the part to be removed is flat, the best mode of procedure is to raise it up, if possible, from the subjacent tissues, and so to draw it out that several long curved needles can be passed in different directions across and under its base. A ligature is then tied behind these, and a neck thus formed for the chain. This method is preferable to transfixing the base of the tumour with a double thread, and pedunculating each lateral half. The great point is to get well below the base of the tumour.

Again, if the mass be very large, or if it be so bound to the underlying tissues as that it cannot be raised up, or if it extend into a canal, as into the rectum, then the chain is first carried under the part in one of its diameters, and made to split in two to its utmost depth, when each lateral part is treated as separate tumours, needles passed under it, a peduncle formed by means of a ligature, and a chain made to surround each. In a word, a peduncle is to be formed in the sound parts beyond the disease, on which the chain of the instrument can be made to operate. The ligature employed should be a hard compact one, as it is least apt to get entangled in the chain, and as few turns as possible of it should be used. When the chain is firmly in place, it may be as well to cut away the thread, to obviate all fear of inconvenience.

As the skin presents by far the greatest resistance—a resistance which, at times, is too much for the chain to overcome, its division by the knife, on the line occupied by the chain, will often be advantageous. As this incision will be but superficial, no fear of hemorrhage need be entertained. The skin may at other times be reflected from the sides of the tumour, which will serve the double end of saving integument, when such is desirable, and enabling the chain to get better below the base. Oiling the chain previous to use makes a considerable difference in its facility of action.

One word as to the mode of passing the chain through and beneath a part. A long and very curved trocar and canula, of a calibre greater than the chain, is made to pass below the part to be split. The trocar being withdrawn, a small elastic bougie, having the chain attached to it, is made to traverse the canula, which is then removed. In this way the chain is conveyed across and under the part. If the base of the tumour be so narrow and deep that a trocar could not traverse it without including much of the sound tissues on either side, then one trocar and canula of large dimensions is introduced from one side, and a lesser from the other, in such a way that the point of the smaller may become enclosed in the larger, and thus a canal of any acuteness may be formed for the passage of the chain.

In the use of the écraseur, it is essential to proceed with slowness and great gentleness. The holding of the instrument firmly, so that it will not shake much during use is a matter of much moment to the avoidance of hemorrhage. Though in many operations it will be sufficient to allow half or even a quarter of a minute to elapse between each movement, yet to avoid all fear of hemorrhage in the case of very vascular growths, it is well to give a minute to each link. This apparent slowness, and the absence of that "dash" so much coveted in the surgery of this country, and which this slowness prevents, is one reason why I believe the écraseur will not make so much way as it otherwise might in England.

Let me glance at the mode of using the écraseur in particular operations.

The great vascularity of the tongue, and the difficulty of suppressing bleeding from it when it is extirpated, presented an obvious case for the écraseur, and certainly in such instances it possesses several advantages over the ligature, which is the only mode of operation which, in such cases, can be said to compete with it. While the ligature takes days, the écraseur accomplishes the end in a few minutes. It needs no re-application; it does not cause the presence in the mouth of a putrid mass for days, which, notwithstanding every precaution, will continually mix its products of decomposition with the food. It enables us to give chloroform, and thus obviate that intolerable pain which accompanies the ligature, and which is so severe as to have caused some to premise the section of the nerve.

If the whole organ is to be excised, two instruments are required. The chain of one is introduced into the mouth by means of a needle passed through an incision below the chin in the same way as Cloquet applies ligatures for accomplishing the same end. The root of the tongue is thus encircled, and cut from above downwards. The second chain introduced by the mouth is laid in the incision made by the first across the base, and is made to divide all the attachments of the organ from behind forward. Half an hour is sufficient to accomplish this operation. Half of the tongue may be removed by passing two chains through the tongue at the angle of union of the diseased with the healthy parts, and making one chain sever the parts from behind forwards, while the second cuts its way out at right angles to the first. A smaller part may be pedunculated by passing a couple of needles through the tissues behind it, tying a ligature round so as to form a neck, and applying the chain. A small chain and the curved instrument answer best for these operations. The case referred to by Mr. Wells as having been followed by hemorrhage, I saw with him, and am convinced the result arose from the cause given, viz., the sudden jerk of the patient's head. If chloroform had been used this could not have occurred. I have reason to think the attendant exaggerated the frequency of subsequent bleeding in these cases. The result in the case above referred to was ultimately most satisfactory.

Castration can be accomplished by the écraseur in two ways. The diseased gland may be drawn out from its fellow; a ligature applied above it, so as to constrict the tissues, and by means of the chain the whole removed *en masse.* Or, if the part is voluminous, two chains are passed through a canula behind the cord and vessels at the point of section, and while one is made to divide the cord, vessels, and skin transversely, the other performs the perpendicular section by which the testicle is divided from its fellow. The loss of integument is apparently an objection to this procedure, but the results on this head were ultimately very satisfactory in the cases I have had the means of observing. There was not a drop of hemorrhage, and I did not learn that any of the subsequent nervous symptoms which follow the use of the knife showed themselves, notwithstanding that we might naturally suppose them more apt to follow. In this operation we must, on the whole, prefer the knife, from its greater rapidity, and the fact that, if properly used, none of those results against which the écraseur is supposed to provide. need be feared. If the écraseur be employed, a very long chain, and one of some strength is required to perform the vertical section, and if desired, the skin may be reflected to any desired extent before its application.

I have seen circumcision performed on several occasions by means of the écraseur, but cannot see the object of its employment in such cases, as the knife accomplishes the object much better and more expeditiously. The hemorrhage, in no case of this sort, is an object worth taking so much pains to avoid. It is easily performed by separating the prepuce from the glans, either by drawing it forwards, and transfixing it with a double thread, whereby to form a peduncle, or, if practicable, introducing within the orifice a pair of forceps, between whose points and the glans the thread, and, finally, the chain is placed. Adhesions between the prepuce and glans will prevent the use of the écraseur, and the laxness of the tissues make them very apt to get drawn into the canal of the instrument when the chain works home.

Amputation of the penis is readily accomplished by means of the "metallic ligature." An elastic catheter being introduced into the canal, a needle is made to transfix both, a thread is tied behind the needle, and the chain made to divide the whole. The presence of the catheter prevents that obliteration of the canal which might result from the strong constriction exercised by the chain, while the integuments and mucous membrane lining the passage are so approximated by the action of the instrument, that hardly any wound results. Thus, then, there is no hemorrhage : the vessels are so closed that purulent absorption is obviated, and the wound may be said to be healed by the action which caused it. The difficulty of seizing a vessel in the stump of an amputated penis is well known to be, at times, very considerable, and this difficulty does not exist in the operation by the écraseur.

The radical cure of varicocele is performed by Chassaignac as follows. The cord and veins being carefully separated, and the former drawn towards the middle line, three needles are made to transfix the parts between the cord and vessels, each needle being at a little distance from the other, and in a line with the axis of the vessels. Care must be taken that the needle lowest down does not transfix the tunica vaginalis. A ligature is placed firmly round the needle nearest the ring, so as to arrest the blood in the veins, and another ligature is twisted round behind the needles, so as to include them all, and form a peduncle. Thus far the patient should be kept in the erect posture, so as to render the vessels full ; he is now made to lie down, and chloroform being administered, the chain is applied behind the needles, and made to remove the knuckle included in the ligature. About half an inch of the veins is thus removed, and the resulting wound is brought together by suture. This operation takes from fifteen to twenty minutes. The rapidity and certainty of the result are the only advantages which this operation may be said to possess over the ordinary ones, while the extent of the wound is a disadvantage. I have not seen either hemorrhage, or erysipelas, or swelled testicle, nor yet troublesome erections, follow this operation when performed by the écraseur.

The removal of piles is performed with wonderful facility by the écraseur. The tumour is seized by a vulsellum, and drawn out, when, if small, a ligature is simply thrown round its base, and the chain applied ; or, if larger, a double thread is carried through its base, and tied so as to constrict it in two halves ; or a needle may be left transfixing the base, and a ligature applied behind it. In many cases the points of the fingers will be sufficient to constrict the neck. Half a minute at least should be allowed between each movement, and ten or twelve consumed in the removal. When the anus is entirely surrounded by vascular piles, Chassaignac removes the whole at one grasp, by introducing a pair of his diverging forceps within the orifice, drawit well out, and applying a ligature, so as to pedunculate the part, and then using the chain. A bougie must in this case be introduced within twenty-four hours, and that with great gentleness to prevent tearing, so as to ensure the patency of the gut, which is apt to be obliterated by the strong compression of the chain. The bowels should be kept quiet by opium for twenty-four hours. I have never seen any hemorrhage occur in the pretty numerous cases in which I have seen the écraseur employed; and I have seen a woman advanced in pregnancy thus with perfect safety relieved from large hemorrhoidal growths. The slowness and extreme pain and irritation which are inseparable from the use of both the ligature and caustic, contrast disadvantageously with the operation by the écraseur, and the subsequent irritation of the bladder also appears much less when the chain is used. The very unfavourable state of the patient, the rapidity of the operation, and the bowels not being kept quiet afterwards, appear to me the causes of the fatal result reported in Liverpool. The bowels, in general, act with very little irritation, in thirty-six hours. In over a hundred cases, many of them of great severity, operated on in Paris, only one fatal result has followed, and in that instance from the breaking of the chain, the essential feature in the operation as preventing purulent absorption—the cause of death—was wanting, viz., the closure of the vessels before their division. By means of the écraseur strangulated piles can be at once removed, and Chassaignac does not find a state of inflammation any counter-indication. Several patients operated on at the Lariboisière have returned to their work in three days; and in one case in which I saw an enormous hemorrhoidal tumour removed, no trace even of its site could be discovered a week after.

I have never seen the écraseur used in prolapsus of the rectum.

I have seen the lower part of the rectum removed for malignant disease twice, and in neither case was there any hemorrhage. It was thus performed:—A long and much curved trocar and canula, was made to pass from the perinæum, at a point anterior to the anus and external to the disease, up beyond the parts implicated in the gut, and outwards towards the coccyx posterior to the diseased tissues. The trocar being then withdrawn, the chain was passed along the canula, and made to split the diseased mass in two after the tube was withdrawn. Long needles were then made to transfix the base of each lateral half, a ligature tied beyond them, and by means of two écraseurs worked simultaneously, both halves were removed at once. When we weigh the difficulties attending all operations of this kind, the great vascularity of the morbid parts, and the difficulty of commanding hemorrhage when it does occur, we must think favourably of the écraseur in such operations if they are to be performed at all. In three cases of extensive disease in which I have known the écraseur employed, one died of peritonitis, one has been well for eighteen month, and the third has also completely recovered.

For the removal of polypi of the uterus or rectum the ecraseur answers well. The curved instrument and chain suits best. A very small chain, perhaps a wire, employed in the same way, will be found most convenient. The chain may either be introduced projecting in the form of a loop from the end of the instrument, or carried round the tumour before being attached. The inflammation and pain which follow the use of the ligature in these cases, and the presence for days of a strangulated and dead mass in the cavity are all avoided by the écraseur, while the hemorrhage, so troublesome, and even at times, fatal, which may result from excision is obviated. The method mentioned by Mr. Wells, at the Medico-Chirurgical Society, of tying the base of the polypus before excision, is, perhaps, better than even the écraseur. The weak state to which many patients are reduced before operation makes the avoidance of hemorrhage very desirable.

I have not seen the os uteri excised by the ecraseur, but having lately seen the operation done by scissors, I can appreciate its performance without hemorrhage. There was one patient at the Lariboisière who had been successfully operated on by the chain two and a half years before.

Vesicular, erectile, and fungous tumours on the surface, on the labia and neighbourhood of the rectum, nævi, &c., are easily removed by the metallic ligature. The great point to be attended to is to raise them well up from the underlying structures to pass needles clear of them and under their base, to isolate them by a ligature, and to work the chain very slowly. The integument may be reflected from their side, both to save it and allow the chain to get well below them. Their extent, too, is thus better defined. The écraseur is not adapted for the removal of the mammæ. Hemorrhage can be here easily commanded, and when the skin is reflected, the operation is nearly accomplished.

It seems absurd to lay open fistula in ano by the chain, but in those cases in which the external orifice is at a great distance from the anus, and we wish the track to heal by granulation, I have seen it advantageously employed.

I have seen the chain used for the destruction of the intestinal valve in false anus, and its speedy result, together with the absence of any gangrenous action, which is so difficult to limit, and which attends Dupuytren's forceps, gives the écraseur certain advantages. An elastic tube is introduced through the parts some days before in such cases, so as to make a passage for the chain.

In concluding these detached remarks, I would add that, whatever opinion may be formed of the écraseur, the absence of hemorrhage, which attends its use, is a fact which cannot be overlooked, and one which we may turn to good account. We may not in every case have the same fear of blood, expressed by M. Chassaignac; yet, it is very true that, independently of the harm its loss may cause in young children and weak persons, the power of avoiding it, and the incidental "cutting," which is the chief fear of a nervous patient, will often enable us to persuade persons to submit to necessary operations, who, if otherwise prevailed upon, might be seriously prejudiced by the mental alarm. I am, as much as any one, opposed to all "unnecessary complications" in Surgery, and particularly to any tendency to that mechanical Surgery so rampant across the Channel: but though the boast of English Surgery is that it accomplishes all operative interference with the forceps and scalpel, yet we may, in striving for simplicity throw away an obvious advantage. To propose the performance of lithotomy or amputation with the écraseur is simply absurd; but I am convinced that, if restricted to its own sphere, and employed for those purposes to which it may legitimately be applied, the écraseur is a most useful addition to our armamentarium. For many purposes, I know of no means which can be thought to equal it, except the galvanic wire, which I had the pleasure of seeing in the hands of Professor Middledorpf, of Breslau, adapted to the uses of surgery in such a way that, if it can be so brought into general use, it must supersede, in most cases, every other contrivance. That the écraseur will ever supplant the knife in most of the cases for which it has been proposed, I do not believe, but that it may in some I sincerely hope.—*Med. Times and Gazette, Nov.* 29, 1856, *p.* 540.

50.—HEMORRHAGE AFTER OPERATION WITH THE ECRASEUR.

By L. E. Desmond, Esq., B.A., Liverpool.

[It is generally supposed that in removing hemorrhoidal tumours, &c., with the écraseur, there is no fear of hemorrhage; but this must not be taken as universally true, especially in the removal of internal piles. In a case which we here give by Mr. Desmond, he says:]

I believe that the already reduced condition of this patient, from repeated and great losses, was the cause of the bleeding, combined with a want of contractility in the vessels, and her straining at stool in an upright position, when she passed the first clot, so soon after the operation. Some degeneration of the heart was also suspected. Nevertheless, I think that, as a general rule, the *écraseur* is safe, and its employment tolerably free from risk. But the fact that hemorrhage *can* occur being once established, it behoves the surgeon not to place a blind confidence in its reputation, but to watch his patient just as though he had operated with the knife.

Case.—Cath. Egan, aged 41, presented herself at the Northern Dispensary, having suffered great pain, for a length of time, from two hemorrhoids just within the anus, one at each side, and a large prolapsed portion of villous mucous membrane anteriorly, from an open vessel in the centre of which she had on each occasion of her going to stool lost considerable quantities of blood; indeed, it sometimes flowed from her as she stood upright, the bleeding point being often outside the anus. She was weak, anæmic, sallow, and altogether cachectic; and was about three and a half months pregnant. It was considered that the constant irritation of these tumours was more likely to produce abortion than the operation for their removal, which was accordingly recommended; and her bowels having been well cleared out, on November 5th, at half-past 2 P.M., while she was under the influence of chloroform, I removed first the two hemorrhoids, occupying three and a quarter and four and a half minutes respectively in their strangulation, and then the prolapsed mucous membrane, of about the size of a Spanish nut; including, of course, the bleeding point, an assistant's finger in the vagina making this part protrude. As this was the largest portion, and looked red and vascular, I spent six and a half minutes in its strangulation. No hemorrhage followed their removal, and the wounds remained closed, with their edges pinched together, as is usual after using this instrument. She was visited in one hour and a half after the operation, when it was found that having a desire to go to stool, she had sat up and passed a clot of about four ounces. There appeared no bleeding now. A grain and a half of opium was given, the parts kept cool, and strict quiet enjoined. Eight P.M. No return of the hemorrhage, nor any further desire to empty the rectum. Another grain and a half of opium was given, and she was left for the night, which she passed without sleep, being very restless, and getting out of bed two or three times for a drink. She parted with no more blood till nine the next morning, when she passed about twenty ounces of dark clot. She was visited soon afterwards, and twenty drops of Battley's solution, with half a drachm of chloric ether, were given, and brandy and nourishment ordered at intervals. At two P.M. she had had no further hemorrhage; and on examining the state of the rectum, with a finger in the vagina, it was found to be quite empty. She had had some vomiting, was restless, and the pulse 110. Stimulants and nourishment to be continued, with ten-drop doses of Battley's solution and ether, and to be watched. At nine P.M. her condition was that of great exhaustion, with some stupor; pulse 130. She was evidently sinking; and she died without any further bleeding, at three A.M. on the 7th, just thirty-seven hours after the operation.

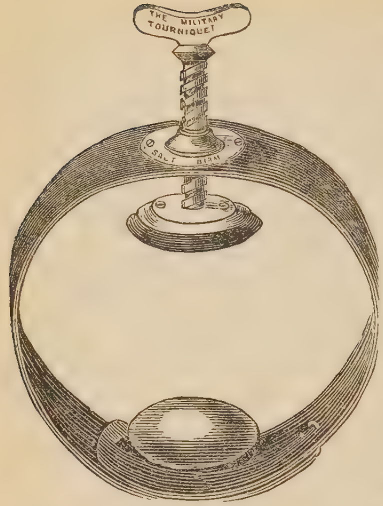
No *post mortem* examination was allowed.—*Assoc. Med. Journal, Nov.* 15, 1856, *p.* 971.

ORGANS OF CIRCULATION.

51.—NEW TOURNIQUET.

By T. P. Salt, Esq., of Birmingham.

It is well known that the Medical Practitioner is subjected to much annoyance from the straps, buckles, and the adjustment of pads in the tourniquet in general use, but on the field of battle or in railway accidents, these evils are greatly aggravated. All these difficulties are removed by the military tourniquet, which has the great advan-



tage of allowing firm pressure upon the artery without interference with the venous circulation, as the constriction does not include the whole circumference of the limb. But the military tourniquet differs from others on the same principle in several respects; and these differences render it not only specially adapted for ambulance and field service, but also for the use of hospitals and practitioners generally; and we understand that this instrument has received the sanction of the Medical Department of the Army, and was supplied to the Hospitals in the East, in the late war.

It consists of an ordinary straight stay-busk, of sufficient length to embrace the largest limb, and, by a series of notches at both extremities, may be so reduced as to fit the smallest. The limb being secured within the circumference of the tourniquet, all that is necessary is to direct the pressure, by means of a screw, upon the artery. The pads are made of boxwood; the busk is covered with a sheathing of india-rubber, and as there are no materials employed capable of absorbing moisture, this instrument is available under all circumstances, and may be applied in one-sixth the time of that in ordinary use.—*Med. Times and Gazette, Nov.* 8, 1856, *p.* 472.

52.—ON THE TREATMENT OF ANEURISM BY MANIPULATION.

By William Fergusson, Esq., F.R.S., Professor of Surgery in King's College, London.

The author explained the term to mean a peculiar forcible squeezing of an aneurismal tumour, with the intention of breaking up the fibrine supposed to be within, so that, being displaced, it might possibly block up the distal end of the tumour, or the artery leading from it. After sketching the various means whereby Nature is supposed to bring about occasional spontaneous cures, particular reference was made to certain cases which had come under the author's observation in which spontaneous cures had seemingly been caused by displaced fibrine. He then proceeded to show that, whilst surgeons had in some degree followed the dictates of Nature, as gathered by experience, in their attempts at cure, they had not, as far as his knowledge went, attempted to imitate the actual displacement of fibrin by any active interference on their part. He then explained how he had for many years entertained the idea that a cure by such a plan might possibly be effected. After many years' watching for a case where, for want of a better plan, such a one as he indicated might be used, a case of aneurism of the right subclavian artery, between and outside the scaleni, came under the author's notice in February, 1852, wherein, appreciating all the known danger of the usual modes of treatment, he resolved to try this plan. The flat point of the thumb was laid on the aneurism, which was about the size of a hen's egg, and when the sac was emptied of fluid blood, the lower surfaces and supposed contents were rubbed against each other. The pulse, which had been carefully examined, was immediately arrested in all the vessels below the aneurism, and the patient became faint and giddy. In six or seven hours, the pulsations returned, but the author repeated the manipulation the next day, with a similar but non-lasting effect on the circulation in the arm; for it was not until seven or eight days that circulation could be readily detected in the arteries of the fore-arm. The tumour gradually diminished in size and in force; a pulsation, and various indications, particularly the gradual enlargement of a branch of the subclavian artery at the root of the neck, the supra scapular, or the transversalis colli, gave every hope that a cure was in progress. After seven months, at which date the tumour was much diminished, the patient had a severe feverish attack, accompanied with excruciating pain in the tumour, and died after a few days' illness. On dissection, it was found that the axillary artery was blocked up, and that the tumour had suddenly extended or given way in the direction of the axillary plexus of nerves, which was supposed to account for the excessive pain. Another case, in most respects analogous to the above, came ere long under the author's notice, and was treated in the same way. A series of phenomena followed, similar in every respect to those observed in the former. The tumour in this case underwent other changes, and ultimately disappeared, between the twenty-second and twenty-fourth month after the manipulations.

[Mr. Pollock wished to know whether Mr. Fergusson had any rule to lay down with respect to the size or kind of aneurism in which it was most applicable.]

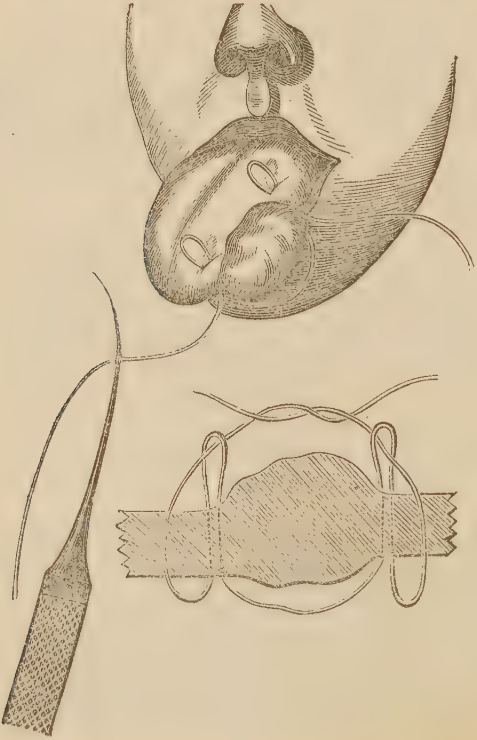
Mr. Fergusson had no rule to lay down on the subject. The data at present were small; but he could see no special objection to the employment of manipulation in large as well as small aneurisms, except perhaps the greater risk that might be incurred in treating the larger forms of the disease. Cases of aneurism were rare in surgery, and of course the instances still rarer in which a surgeon would feel justified in departing from the usual course of proceeding in such cases. In the kind of cases he had selected, both the operations of Hunter and Wardrop had never been successful, and treatment by a new plan was therefore justifiable.—*Lancet, Nov.* 15, 1856, *p.* 539.

53.—NÆVUS ON THE SIDE OF THE TONGUE—STRANGULATION BY MEANS OF A NEW FORM OF LIGATURE.

By John Wood, Esq., King's College Hospital.

[In the subjoined case, the tumour, though it had existed as long as the patient could remember, was most probably not congenital. Many nævi remain stationary for some time, and then quickly increase to an alarming degree: hence in young children they should be destroyed as soon as possible.]

The tongue is not a very common situation for one of these growths, and, when present, must be peculiarly sensitive to the irritating effects of the substances with which it comes into contact. In the case we now record, it was strangulated by means of the ligature, applied in a very novel and simple manner, in the form of a double noose, the ad-



vantages of which seem to be its simplicity, and the perfect equality of the pressure throughout. As only one string is used, its application is effected very rapidly, and the single fastening may be made into a bunch, so as to be tightened, if necessary, after the shrinking of the tissues. By the position of the two nooses, the tumour is effectually circumscribed. The drawing represents the manner of applying it, perhaps much better than the description given of it in the details of the case.

Jane L., aged twenty-two, a maid-servant, applied to Mr. Wood, at the Carey-street Dispensary, Sept. 22, 1856, for a tumour on the side of the tongue, impeding speech. The patient is a pale-looking girl, of fair complexion. She states that she has always had good health, and been regular in menstruation; has noticed a tumour on the left side of the tongue as long as she can remember. This was, at first, about the size of a pea, not at all painful, and remaining of the same size until six years ago, (soon after the period of commencing menstruation,) when it began to increase, and became slightly painful when pressed upon. During the last twelve months, its enlargement has been more rapid; has never had anything done for it. On protruding the tongue, a tumour, about the size of a large Barcelona nut, was seen on the left side, about half an inch from the tip, involving the whole thickness of the organ at its lateral border. It is slightly lobular, and of a deep purple colour, most evident upon the projecting lobules. Over the surface, particularly at the posterior and outer part, many enlarged and flattened papillæ are evident, spread out apparently by the distention of the tumour beneath them. The tumour can be much reduced in size by pressure, and is evidently a nævus of the congestive or venous kind. She was told to come next day to King's College Hospital, and have it operated on.

Sept. 23rd. To day Mr. Wood encircled the tumour with a ligature. This was effected by the use of a handled needle with a slight curve, and armed with a single stout ligature-thread, well waxed and greased, in the following manner:—First, at the junction of the further and inner borders of the tumour, but clearing its substance, a single noose was passed through the tongue from below upward, the needle being disengaged by catching the thread at the dorsum of the tongue, on the concave side of the instrument. The longer end of the string was then passed again through the organ at the junction of the anterior and inner borders of the tumour, disengaging the needle exactly as before, and drawing it, this time, from the string. The ends of the ligature were then brought round the anterior and posterior borders of the tumour, and passed through their respective opposing nooses at the dorsum; the latter drawn well down into the substance of the organ, and the former tied on the dorsum in a firm knot. The ligature slid easily, and the strangulation was perfect. A small portion of the tongue was cut by the string, but no bleeding whatever followed. The patient was recommended to suck pieces of ice, and to refrain from talking.

24th. The patient showed herself again to-day at the hospital. Strangulation of the nævus was perfect; no bleeding, and little or no pain.

29th. She came to the dispensary with a healthy, depressed, firm, granulating sore in the site of the tumour, which had separated the day before without hemorrhage, after an increase of soreness and pain. It was found on examination, that the ligature had compressed the structures within the constriction to the diameter of rather less than a quarter of an inch, and could easily be unravelled and examined. The sore was touched at the edges with nitrate of silver.

Oct. 31st. The patient is quite well; the articulation is perfect; very little depression at the cicatrix.—*Lancet, Nov.* 15, 1856, *p.* 538.

54.—*Caustic in Nævus.*—Dr. Macke recommends the following caustic as a highly useful application to *nævi materni*, especially in young children. Corrosive subl. 4, collodion 30 parts. It is to be applied by a small brush, and desiccation takes place so rapidly that the action of the caustic does not extend beyond the spots it is applied to. A solid eschar, one or two lines in depth, falls off in from three to six days, and the pain induced is inconsiderable, and of short duration.—*Revue Med.*, 1856, *p.* 692.—*Med. Times and Gazette, Oct.* 25, 1857, *p.* 427.

55.—*Treatment of Nævus by the Perchloride of Iron.*—The perchloride of iron still holds its place as a very useful agent in the treatment of some forms of nævus. Mr. Lawrence, in St. Bartholomew's, and Mr. Cock and Mr. Hilton in Guy's, frequently employ it as at first proposed, by means of injection. Used in this way, its chief advantages are in cases in which the growth is too large to be ligatured or excised. Repeated injections of small quantities at a time appears to be the most successful method, as larger ones risk sloughing. There is a case now in the Middlesex Hospital under the care of Mr. De Morgan, in which a nævus of the middle of the upper lip spread rapidly and ulcerated through the lip, leaving a large fissure. In this, by the use of the perchloride, much advantage has been obtained; the disease does not appear to be spreading. The child's condition is now that of a single harelip, both edges being, however, involved in nævoid structure. Mr. Bowman, in two cases recently under his care, in which the nævus was on the eyelid, has employed the perchloride, introduced by a thick ligature of silk. One of these was that of an infant at the Ophthalmic, on whom we saw him operate the other day. The nævus was about the size of a sixpence, and involved the centre of the upper eyelid, being partly cutaneous and partly under the skin. To have tied it would have involved a subsequent eversion of the lid; and it became a problem of much interest to cure it without leaving a scar. The plan adopted was to draw through its centre two large ligature threads previously soaked in the perchloride. To prevent the threads from being squeezed dry in entering the skin, punctures were made in the latter with the point of a knife, and a broad needle was employed. So complete was the coagulating power of the fluid, that the threads came out quite unstained, and not a drop of blood escaped from the punctures. This having been done, a small actual cautery, about the size of a probe, was introduced into the middle of the nævus, and made to burn subcutaneously a little patch in its centre. The seton threads were to be taken out the same evening. It was hoped that the irritation, &c., which must follow these procedures would destroy the morbid vascularity of the part; and the plan altogether struck us as exceedingly likely to be successful, and at the same time possessing the great advantage of being quite free from risk. Its success it will be for time to determine. With the perchloride, in cases in which the nævus is too large to be safely tied, much patience must be exercised. Many injections will be required, and the shrinking of the vascular tissue will often not be nearly so great at the time as it will become after the lapse of a few months. As exemplifying the dangers of the ligature, we may mention that the writer assisted a fortnight ago in tying a very large nævus on the side of the face in a case in which the infant, healthy at the time, died a week afterwards, and probably from the irritation caused.—*Med. Times and Gazette, March* 21, 1857, *p.* 286.

56.—*Varicose Veins treated by Needles and Subcutaneous Section.*—Those students who follow the practice of Mr. Erichsen, at University College Hospital, must have seen him treat varicose veins, we may truly say, scores of times, by passing pins under the veins, and then applying a figure of 8 suture over them, generally in three places. This produces obliteration of the vein, and some days later the vein is divided subcutaneously, and in three or four days the cure is complete. This was done on a young woman with this condition of the veins of the left leg. At King's College Hospital. we saw a case treated by Mr. Henry Lee in the same manner. He passed the pins under the veins on the 7th inst., on the 10th he divided the veins subcutaneously, on the 11th he removed the pins, and on the 17th the patient went out well. The subdivision of the veins after obliteration is a process for which the profession is solely indebted to Mr. Lee as the first to recommend it, and the advantages of such a proceeding cannot but strike the most superficial observer. Mr. Erichsen's practice in these cases differs from Mr. Lee's in that he removes the pins altogether when he divides the vein between them. We do not recollect any single instance, in the large number which we have seen treated, of any bad effects following this plan of treatment. The great secret in the success is to avoid puncturing the vein, and this is effected by lifting it up, and passing the pin well under it.—*Lancet, Jan.* 31, 1857, *p.* 116.

have been, considerable inflammation in the skin, about the issue, followed by a sort of erysipelatous redness, and some temporary swelling of the glands in the groin; a painful state of the issue accompanied by ulceration of the subjacent parts; a tedious process of cicatrization. But perhaps the slower the progress of the issue, the more complete the obliteration of the veins, and the more perfect the cure. Some judgment is required in the selection of spots for the issues. As a general rule, the patients require good food, and, not uncommonly, some tonic medicine such as cinchona or quinine. I must confess that the cases have gone on better when generous diet has been allowed, but at the same time the surgeon's judgment must be exercised according to the features of each particular case. It cannot answer any good purpose to administer stimulants and full diet to all patients labouring under this disease without discrimination. —*Med. Times and Gazette, March* 11, 1857, *p.* 257.

58.—*Elastic Ligatures.* By F. A. Nesbitt, Esq.—[As the elastic ligature is much superior to the inelastic for the purpose of strangulating vascular tumours, hemorrhoids, &c., we here give the method of its application.]

An elastic thread being stretched to its fullest extent, is tied in a single knot, slipped over the body of the tumour, and then securely fixed by a double knot. By its own elasticity it contracts again as quickly as possible, and what was, on its application, a large noose, is thus reduced to the smallest possible size. Strangulation follows, of course, and the tumour dies and falls off in a few days.

By this method a great deal of pain is saved to the patient, the use of the knife is frequently avoided, and even the fashionable écraseur itself is, to a great extent, superseded. Fistulæ in ano may be treated in a similar way, the thread being allowed to cut its own way through the sphincter.—*Med. Times and Gazette, Nov.* 8, 1856, *p.* 478.

DISEASES OF THE ORGANS OF RESPIRATION.

59.—ON A GROOVED HOOK FOR TRACHEOTOMY.

By T. Spencer Wells, Esq., Surgeon to the Samaritan Hospital, &c.

[This instrument is a simple grooved hook or tenaculum, the groove running along the convexity. It was first devised by M. Chassaignac but has not been brought into use in this country. It supplies us with a simple, safe, and rapid means of fixing the trachea, by which the operation is very materially facilitated.]

Nothing can be easier than the performance of tracheotomy in the dead subject, or on patients so far asphyxiated, or in such a state of syncope, that the trachea is motionless. But while respiration is going on the trachea ascends and descends with each expiration and inspiration—to a slight extent, it is true, when respiration is normal, but in a very different degree when it is obstructed. This mobility of the trachea may not cause any great difficulty in opening it if the patient be an adult, but those who have been called upon to perform tracheotomy on a young child with a short fat neck, know well how very desirable it is to be able to fix the trachea. Cases are on record in which surgeons have been actually unable to open the canal. In other cases the important vessels on either side have been wounded. The knife, during some sudden motion of the patient, has traversed the trachea and wounded the œsophagus, the accident being followed by the escape of fluid and solid aliments into the trachea, or the knife has passed too close to the sternum and wounded the innominata. Still more commonly the trachea has not been opened in the centre, but to one side, so that the wound in the skin and the tracheal opening have not corresponded, and there has been difficulty in fixing the canula. Lastly, even supposing the incision to have been properly made in the trachea, there has been delay and difficulty in the introduction of the canula. Who has not seen, as soon as the trachea is opened, and before the surgeon has had time to separate the divided edges and ntroduce the canula, the patient cough and sob, and, a little blood passing into the air passages, at once begin to cough spasmodically, bespatter the bystanders with bloody mucus, and appear to suffocate while the surgeon is vainly endeavouring to fix the trachea? and possibly the patient may be dead before the canula is introduced. Such things have been.

All these difficulties and dangers may be avoided by the use of M. Chassaignac's grooved hook. In a case where there is no necessity for speed, the trachea may be laid bare by incision, but let us take one where no time must be lost. The cricoid cartilage is the point to be fixed. This is a certain guide, as it can be felt always however young or fat the patient may be. It is the only complete ring in the tube, and therefore resists pressure while all the rest of the tube yields before the finger. The finger is passed upwards from the sternum in the median line until the resisting cricoid cartilage is felt. It is immediately beneath the lower border that the hook is to be inserted. The nail of the left index finger marks the lower edge of the cartilage, and the hook held in the right hand is passed close to the nail directly into the trachea. The only difficulty in doing this is from the skin moving over the cartilage, but this may be avoided by a simple puncture. When the hook is in the trachea the handle is made to describe half a circle, and is brought up to the centre of the patient's chin, so that the cricoid cartilage being held firmly, the trachea may be drawn upwards and forwards well out of danger. A little air and bloody mucus escaping along the groove is a certain sign that the hook is in the trachea. This being the case of course nothing is more simple than to pass a knife along the groove and divide three or four of the tracheal rings. By holding the hook in the left hand and the knife in the right, the operator has the most perfect command of the trachea, not only for the incision, but for the dilatation of the wound and the introduction of the canula.

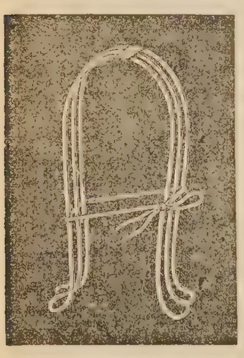
I am quite aware of the objections which may be made to the introduction of a new instrument: such as its being unnecessary, the operation having been very well done with a penknife and a quill, or a scalpel and a piece of bent wire—that the instrument would never be at hand when wanted—and so on; but while admitting that the surgeon should be prepared to act with the simplest tools in case of emergency, I think any one who has tried M. Chassaignac's hook once would be disposed to do so again, and nothing would be easier than to add a groove to the ordinary tenaculum of the pocket-case.—*Med. Times and Gazette, Feb.* 28, 1857, *p.* 209.

60.—NOTE ON TRACHEOTOMY.

By Dr. MARSHALL HALL, F.R.S., of the Institute of France, &c.

[We must admit that tracheotomy is a heroic remedy, and only appropriate to Herculean forms of disease. But Dr. Marshall Hall says]

I am persuaded that life may be saved, where imminently threatened, by a simple pair of pointed scissors. The integument, being taken up horizontally by the thumb and finger of the left hand, should be divided longitudinally by the scissors; these should then be promptly forced into the trachea, to the proper depth, and opened horizontally to the just extent; the scissors must be then turned, being kept in their place, and opened in the direction longitudinally; the operator has thus made, in little more than a moment of time, an opening through which the patient may breathe until further appliances can be obtained. Life or death depend meanwhile upon his steady hold of the instrument.



Instead of ordinary pointed scissors, I have recommended such scissors properly *notched* on the external edge, so as to prevent their passing too deeply into the trachea on any sudden movement of the patient during the operation; and I recommended that *all* scissors, in surgical cases, be so notched.

The next step to be taken is to introduce a proper instrument for keeping the opening thus made into the trachea, duly and securely patent.

The last and the *best* instrument of this kind is, I am firmly persuaded, the simple dilator, or tracheo*tome*, of which I here present to your readers a delineation and description:

It is obvious from its form that it may be compressed to the smallest bulk, introduced into the tracheal orifice, and allowed to expand within its edges, where it will become securely *buttoned*, whilst its expansion is limited to any extent required in infant or adult, by the thread of silk tied round the part exterior to the orifice. It may. of course. be made of any appropriate size.

It is almost needless to say, that the instrument consists of three portions of silver-wire placed parallel to each other, and properly attached by a cross wire soldered at their middle part, and then bent until they are parallel again ; and then joined at their extremity and turned up to secure the *buttoning*.

The instrument may be removed, washed, and replaced by any person of the most ordinary nerve and intelligence.—*Lancet, April* 11, 1856, *p.* 370.

ALIMENTARY CANAL.

61.—ON SOME OF THE EFFECTS PRODUCED BY CARIOUS TEETH.

By Samuel Smith, Esq., Senior Surgeon to the Leeds General Infirmary, and Lecturer on Midwifery at the Leeds School of Medicine.

[The following lecture by Mr. Smith contains so many interesting facts that we cannot abbreviate it, we therefore give it entire. It is from such practical remarks as these by old experienced surgeons, that we derive the most pleasure in reading.]

On the present occasion it is my intention to describe to you some of the effects produced by carious teeth, the causes of which are occasionally overlooked by practitioners ; and I am induced to do this by the occurrence of a case which came under consideration on my last admission-day.

Case 1.—Elizabeth H., aged 40, was sent from some distance in the country to this Infirmary, Dec. 12th, 1856, to be treated for what she was told by a medical practitioner was a cancerous tumour in the cheek. On examination, a tumour, the size of a small chestnut, was found, with an ulceration of the mucous membrane, just fitting the sharp edge of one fang of a carious molar tooth of the lower jaw, which was making its way from the gum. Being fully assured, from former experience of many cases of a similar kind, that this was the sole cause of the tumour and ulceration, I removed the tooth, and in your presence promised her it should be well in a few days. A little lotion was ordered for the mouth. She appeared again on the next out-patient day, Dec. 17th. The ulceration was healed, the tumour gone, and she was discharged cured.

Now, I tell you, that if the cause of that tumour had been overlooked, no treatment of any kind would have been of the least use; it would have continued, it would have increased, and gone on from bad to worse for months, and possibly for years, unless the tooth had been removed by the efforts of Nature. I could tell you of scores of cases like the above; one more shall suffice.

Case 2.—A gentleman from a distant town, where there is a large hospital, happened to have his leg broken in Leeds, and was in lodgings under my care. His wife came to attend upon him, and she consulted me about an ulcerated tumour in the cheek, which had existed a long time, and for which she had had the advice of several surgeons, and various applications used without advantage. I detected one fang of a carious molar of the lower jaw laid horizontally on the gum, but adherent and embedded in it, with the ragged point fitted into the centre of the tumour. I pushed it away with my pencil-case, and the tumour disappeared in a few days. Both these patients were under the impression that they were suffering from cancerous disease.

Sometimes, instead of the cheek, the tongue suffers from the same cause. I have detected many cases of this kind. One interesting example shall be sufficient to explain such cases to you.

Case 3.—More than thirty years ago, one out-patients day, my senior colleague (Mr. Hey) informed me that a few days previously he had incised a malignant-looking tumour from the tongue of a young country-woman, who was a private patient of his; that, to his surprise, in a few days the tumour had sprouted out as large or larger than before the operation; that, as she was not in circumstances to pay consultation fees, he had requested her to be in the house-surgeon's room at twelve o'clock, in order that he might ask Mr. Chorley's opinion, along with my own, on the case. On that day Mr. Chorley did not come to the Infirmary, and I went with Mr. Hey to see his patient. There was a foul, dark, fungoid tumour, which occasionally bled, and from which she suffered much pain during every attempt to speak or masticate food; it was the size of a small walnut. On examining it with the finger, I detected two broken incisors (the middle and left lateral of the lower jaw) leaning inwards, and with sharp-pointed edges fitting into the centre of the tumour. I was immediately convinced that these two teeth were the cause of all the mischief, and stated that opinion to Mr. Hey, who appeared doubtful. I said that he would not be justified in applying the ligature or using any other means, without first waiting to see the effect of the removal of the two broken carious teeth. I never saw the young woman again, but I was informed by Mr. Richard Hey that the teeth were drawn, and soon afterwards the tumour entirely disappeared, without any other means being resorted to.

Sometimes carious teeth produce abscesses in the cheek, neck, and throat; these burst or are opened, and form fistulous sores, which will remain unhealed for months and years unless the cause be removed, just in the same manner as you see fistulous openings in the leg in cases of necrosis, and which remain open for years until the sequestrum is removed.

Case 4.—Soon after I commenced practice I frequently met a young gentleman of fortune walking about with a piece of black plaster on the left cheek, as large as a dollar. I often wondered what could be the matter, but not being his attendant I had no business to inquire. After suffering the annoyance of his black plaster for a very long time, and being in London, a friend persuaded him to consult Sir Astley Cooper. He made very short work with him, took his fee, and sent him to a dentist to have a certain upper molar removed, informing him that he would be well in a few days after. His prognosis was verified by the result. This young gentleman is now an old one, and I occasionally meet him; he has never worn his black plaster since, but he has the appearance of a Peninsular veteran who had received a musket-ball in the left cheek.

Case 5.—A few years ago a middle-aged man, residing in the south, and who travels every year with surgical instruments on sale, after transacting business with me, asked my opinion about a fistulous sore which opened on the middle of his whisker on the right cheek. I introduced a probe, and came in contact with the fang of the last molar tooth of the upper jaw. I persuaded him to allow me to draw it, on the promise that he should be well in a few days. I requested him to write by post on the tenth day, and let me know the result. He wrote to say the discharge ceased the day the tooth was drawn, and that it was perfectly well. Now, here was the case of a person in constant communication with surgeons, selling them daily caoutchouc instruments of his own manufacture. He had suffered for a long period, had often taken advice, but had never had the true nature of his disease pointed out to him.

Case 6.—Seven or ten years ago a young woman came under my care at the Infirmary with a fistulous sore in the fore part of the throat, within an inch of the sternum. It had been discharging upwards of a year. I probed it; the instrument could be passed in the direction of the molar of the lower jaw on the left side. On inquiry, she said that eighteen months before she had had a tooth drawn at the Dispensary, but the fangs of the tooth were left in the jaw. Afterwards an abscess formed, which descended lower and lower till it burst midway between the sternum and pomum Adami. I drew the stumps; it still discharged for a week or ten days, when it got well without any other treatment. I mention the above case to impress on your minds the possibility of the fistulous orifice being at a considerable distance from the offending tooth. The fistulous sores proceeding from carious teeth are generally on the cheek or at the angles of the jaw. On the application of the probe you will often find the instrument pass readily to the interior of the mouth; you have then only to select the proper victim for sacrifice, and you will rarely err in this respect. Where the sinus from the sore to the tooth is short, the discharge from the external sore will generally cease in a day or two after the extraction of the tooth, but where it is long, as in the above case, it may be a week or two.

There is an excellent old adage—"Prevention is better than cure." This applies well to surgery, and especially to such cases as we are alluding to; for as abscess in these cases always precedes the formation of a fistulous sore, it should be your endeavour to detect these cases at this particular period. I find that several cases of this kind come under my observation every year; the last, during the present month.

Case 7.—Thomas K—, an Irishman, aged fifty, was admitted as an out-patient on the 2nd of January. His case is set down as abscess in the cheek. The jaw was closed: he could not open his mouth. He came again on the 7th, no better; and it was not till the 14th that I detected the true nature of the case. I examined the mouth, and found two detached fangs of a molar of the lower jaw carious and loose; he could not open the mouth sufficiently for the introduction of forceps, but I pushed them out with a punch.

Jan. 21st. He says he could open his mouth comfortably the following day; The swelling had gradually subsided, and he was discharged cured.

Case 8.—A long time ago a near relative consulted me about an abscess at the angle of the jaw, on the right side. I suspected its cause, for on pressure I could make pus appear at the edge of one of the molars. He refused to have the tooth drawn until I assured him the abscess would burst externally, and continue discharging till the tooth was removed, and that an ugly looking scrofulous cicatrix would remain for life. The tooth was drawn; the abscess discharged itself into the mouth, was soon well, and left no mark.

Now in both these cases, if the cause had not been detected when it was, in ten or twelve days the abscess would have burst externally, and a fistulous sore would have been the consequence, which would have continued discharging until the teeth had been removed either by nature or art. I have seen scores of such cases. Whenever you extract a tooth in these cases, always examine it carefully; you will invariably find the fang deprived of its periosteum, and sometimes a little sac attached to its root, containing pus.

Sometimes, where abscess forms from a carious molar of the upper jaw, the matter, instead of making its way to the cheek, gets into the antrum. I have seen several cases of this kind, and have at present a private patient under treatment. Remove the tooth, and if this does not give sufficient outlet for the matter, perforate the antrum with a joiner's gimlet. There has been a very interesting case of this kind recorded in the journals during the present month.

Case 9.—A horse was condemned to the knacker's yard as being afflicted with glanders, having a foul offensive discharge of purulent matter from the nostrils, and being in the last stage of emaciation. A veterinary surgeon finding that it could not masticate its food, examined its mouth, and detecting a carious tooth in the upper jaw, extracted it. The discharge ceased; the horse soon began to thrive and got well. Here was a case in which there was as much professional credit due to the surgeon as if instead of saving a horse from the knacker's yard he had saved the life of an alderman. I was speaking yesterday on the subject to my friend, Mr. Louis Oxley, the dentist, and he related to me a case of such interest, that I requested him to write it out for me. Here you have it in his own words:—

Case 10.—A young woman, of rather strumous habit, complained of a dull, aching pain under the orbit. The pain lasted from three to four months, attended by a gradual elevation of the orbital surface of the maxillary. The eye above this surface became at length so affected as entirely to lose its functions. At this stage of the case the young woman, who was attended by a general practitioner, who ignored dental surgery and pathology, resorted to leeches, blisters behind the ears, and drastic purges; I need not say ineffectually. After two or three months loss of the sight the young woman first perceived a discharge from the right nasal fossa of a thick purulent fluid. This discharge had existed for eighteen months when I first saw her, *even in spite of the aforesaid remedies!* An examination of the mouth at once revealed the cause of so much misery, and the removal of three roots in a state of periostitis was the simple means by which two most important organs regained their proper functions.

There is another case in which swelling, inflammation, and ulceration at the sides of the tongue take place, and which does not appear, as far as my experience goes, excepting in individuals approaching to or upwards of sixty years of age; but I have seen several cases of it, and shall proceed to describe the cause. If you will examine the form of the molars of the lower jaw where they come in contact with the sides of the tongue, you will find the line from the neck to the top of the crown gives a convex outline, so that for thirty or forty years during the act of speaking or mastication the sides of the tongue come in contact with a smooth rounded surface; but the constant grinding of hard food, such as biscuits, &c., for two score years, where all the teeth have remained sound, wears away one-third of the upper part of the teeth, the bony part is worn away deeper by one-eighth of an inch than the enamel, leaving a sharp edge projecting into the mouth, so sharp that, by firmly pressing the finger and drawing it along the edge, you might cut it to the bone. The friction of the tongue against this sharp edge produces the effect I have described. It is only necessary to round off the edges by the use of a fine file, and the tongue will soon heal. The operation will require to be repeated in a few years.

Now, gentlemen, I conclude most of you intend to practise the three branches of the medical profession, or to become what is called general practitioners. The study of the anatomy and physiology of the teeth is in general too much neglected; it is a most interesting subject, and surgeons often make serious mistakes who are ignorant of it. There are those who take a pride in confessing their ignorance of some parts of their profession—midwifery and dentistry, for instance. I hope you can all with me feel a sincere pity for such.

Case 11.—Many years ago, a patient of mine went with her family to a fashionable watering-place. One of her children, nearly four years of age, was taken ill, and a surgeon of some eminence was called in, who attributed its illness to teething, and lanced its gums. Now he ought to have known the child had cut all its first set of teeth nearly two years previously, and, as I hope you all know, that it would be at least three years before another tooth would be ready to perforate the gums. These are the sort of errors you will commit if you remain ignorant of this subject when you are in practice.—*Lancet, Feb.* 14, 1857, *p.* 157.

62.—*On some of the Effects produced by Carious Teeth.* By Dr. Robert Crawford, Peebles.—[The perusal of the foregoing practical lecture on this subject by Mr. Smith, of Leeds, has led Dr. Crawford to record the following cases of a similar character which have occurred recently in his practice, but which did not strike him at the time as being connected with the teeth.]

1. R. S——, by occupation a coachman, footman, &c., to an old gentleman, called upon me two years ago to get something done for a sore on the centre of his left cheek. He said it had been a boil, which suppurated and broke about two months previously. His face was much swollen, and, as he had to wait at his master's table, it rendered him unfit for his work. The patient had consulted another surgeon, and had tried various remedies, but could not get it healed. He was otherwise the picture of health. I thought it might be some chronic affection of the parotid gland, strumous or otherwise. I gave him some zinc lotion to inject into the opening, and to apply a bit of rag dipped in the same, and covered with oiled silk. In about three weeks he came to tell me that the sore was healed, but his cheek was swollen. I gave him iodine to apply over it. There was an ugly cicatrix where the sore had been. In the course of another month the patient came again, presenting an abscess ready to burst in the old place. I opened it, told him to poultice it for a few days, and then use the former treatment. In about three months he called again, and told me that after he last saw me, being useless in his situation, he went home to Edinburgh, where he saw Professor Syme, who gave him something to use, and that the sore did not heal for six weeks after I opened it. The Professor told him that the sore arose from a wisdom tooth coming up, for which there was not room in the jaw, and advised him, if the sore

did not heal, or should trouble him again, to have the adjacent tooth extracted. His face was now much swollen, and an abscess was evidently forming again. I examined his mouth, and saw that he had got the upper wisdom teeth only, and that there was evidently a want of space for those below. I accordingly extracted the second molar tooth, after which the swelling gradually subsided, and the wisdom tooth soon filled up the vacant space. He was now permanently cured.

2. Some months before I saw the last case, R. T——, a forester by occupation, came to me with a large abscess on the left cheek, about an inch above the angle of the jaw. I opened the abscess, and by using poultices for some days, and water dressing afterwards, the sore healed in about two weeks. Shortly after I extracted the tooth from case No. 1, I was again visited by No. 2. The abscess was now the same as before; but observing the similarity between the appearance of this case and the former, I examined his mouth, and saw that he still wanted the wisdom tooth in the left lower jaw, for which there was evidently no room, and the gum round about was a good deal inflamed. It so happened that a year or so before he came to me with the first abscess, I had extracted the second molar tooth in the right lower jaw for toothache, the place of which was now filled up by the wisdom tooth. I now extracted the same tooth on the left side, when the abscess broke into the mouth, and the wisdom tooth replaced the removed one as before. He has not been troubled since.

3. A. T——, a dealer in tea, consulted me four months ago for a swelling on his cheek. I found that an abscess was forming. The treatment and result were the same as in the other cases, with the important exception that, having recognised the nature of the case before the abscess broke on the cheek, I saved this patient from having an ugly cicatrix, as the other two unfortunately had, and will have as long as they live.—*Lancet, March* 21, 1857, *p.* 296.

63.—*Cements for Stopping the Teeth.*—M. VAGNER recommends the following:—A drachm of gutta percha, softened by hot water, is to be worked up with catechu powder and tannic acid, of each half a drachm, and with a drop of essential oil. For use, a morsel is to be softened over the flame of a spirit lamp, introduced while warm into the cavity of the tooth, and adapted properly. The mass becomes hardened, and even after several months exhibits no traces of decomposition. M. POUTON states that we may also obtain an excellent cement by dissolving one part of mastic in two of collodion. Having well dried out the cavity, a small ball of cotton soaked in some drops of the solution is to be introduced. It soon solidifies, and may remain *in situ*, seeming also to exert an influence on the further progress of the caries.—*Rev. Méd.—Med. Times and Gazette, Feb.* 21, 1857, *p.* 197.

64.—NEW SUTURE FOR HARE-LIP.

By Alfred J. Wood, Esq., Surgeon to the Gloucester Infirmary.

[Since 1841 the author has used this form of suture in cases of hare-lip with uniform success. He remarks that the rigidity of the needle, and the unavoidable compression of a portion of integument between it and the twisted suture, are the probable causes of failure in cases in which the latter is employed. These objections are avoided by Mr. Wood's plan.]

In place of the needle I employ a pair of silver discs. Each of these has a perforation in the centre. Across the back of one of them a portion of silver wire of suitable form is soldered, and is thus attached by its two ends, while the intervening portion lies over the perforation in the disc, leaving a free space on each side for the passage of threads. (Fig. 1.)

1

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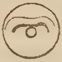

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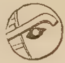

A similar piece of wire is attached by a hinge to the other disc, so as to admit of being opened and closed, or rather, to speak more correctly, of being raised and lowered on the back of the disc. (Fig. 2.)

The needle which I employ exactly resembles that sold in the shops as a darning-needle No. 4; and it is armed with a double ligature of soft silk, five or six inches in length. To carry this needle a small forceps, which I have had constructed for the purpose, will be found very useful.

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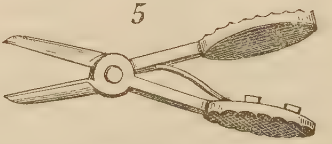
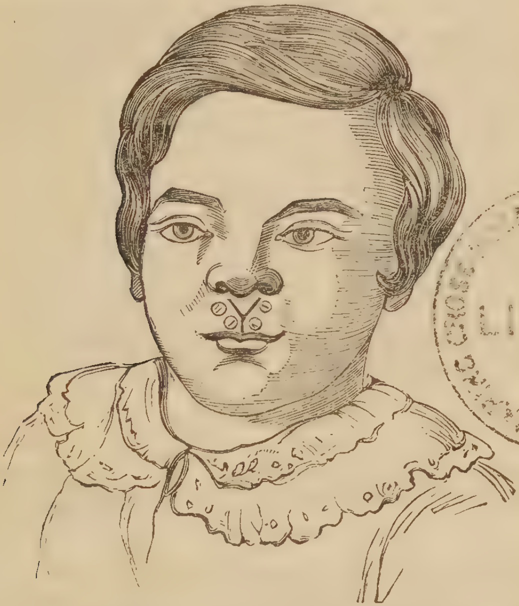


Preparatory to the operation, the two free ends of the ligature (which has been previously threaded on the needle) are passed through the aperture in the disc (Fig. 1); so that one end may pass out on each side of the silver wire, over which they are then secured by a knot.

The opposite edges of the fissure being now pared as usual the needle is introduced as the harelip needle would be; but it is then drawn through, as well as the ligature, until the disc is brought up firmly against the lip.

Disc, Fig. 2, the wire being opened upon its hinge, is now threaded upon the ligature, and the needle being cut away, the ends of the ligature are separated, and the hinged wire closed down between them; and the pared edges of the fissure having been brought firmly into apposition, the second disc is slipped up close against the lip, and the threads of the ligature are tied over the silver wire. The ligature is then complete.

6.



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I conceive that this ligature affords an additional advantage over the needle and twisted suture, in facilitating the application, and rendering more efficacious the operation of such auxiliary supports as it may be thought desirable to employ; and I believe that, in every case, it may beneficially supersede the twisted suture, than which it undoubtedly produces much less constriction and irritation of the parts included.

Also, in closing the edges of wounds made in the great operations, where ligatures seem desirable; and in cases where deep sutures are required, and where the quilled suture is customarily employed, as in the operation for the cure of lacerated perinæum, I think that the discs and double ligature may be used with advantage. For these purposes, I have had discs constructed of larger diameter (Figs. 3 and 4), and adapted to the curved needle requisite for these proceedings.—*Med. Times and Gazette, Jan.* 3, 1857, *p.* 4.

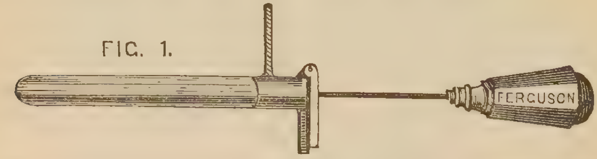
65.—RADICAL CURE OF INGUINAL HERNIA BY WUTZER'S OPERATION.

By Holmes Coote, Esq., St. Bartholomew's Hospital.

[Hernia undoubtedly is one of the commonest surgical affections met with, and although by proper care it may not be serious, still cases are very frequent which require operative interference even when trusses have been worn. Is there no plan then, we may ask, which promises a radical cure? We must acknowledge our difficulty here, and also the importance of any procedure which may hold out a possibility of a permanent cure.]

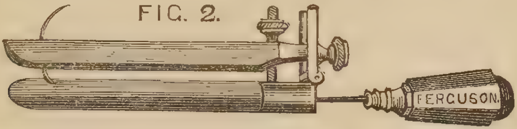
The operation, as performed by Professor Wutzer of Bonn, consists in the passage of a cylinder, well oiled, into an invaginated portion of the scrotum, running up the inguinal canal as far as the internal abdominal ring, and on satisfactorily effecting this, a needle is passed through the cylinder, the canal, and the integuments, and a concave wooden cover-plate situated over it is pressed against the skin by means of a screw. This instrument, as manufactured by Ferguson of Giltspur street, is represented in the accompanying wood-cut, somewhat modified and improved upon the original of Wutzer's.

FIG. 1.



The cylinder (fig. 1) is of very hard wood, its diameter varying according to the width of the canal, becoming conical at its blunt extremity. It contains a canal, lined with metal, which conducts an elastic steel needle, flattened on the point, and furnished with an immoveable handle, (Wutzer's is moveable,) which is partly drawn out in the engraving. A round opening near the point of the cylinder allows the needle to pass through, so that, when the cylinder has been properly introduced, pressure upon the handle of the needle sends its point along the interior of the cylinder, pierces the structures immediately in front of it, and emerges through the integuments. When this is effected, a concave case of the same kind of wood, to correspond to the convex surface of the cylinder, is placed over it, for the purpose of applying regulated pressure. This case is wider than the cylinder, and has an opening near its end, to receive the projecting point of the needle, which thus fixes one end of the cover over the cylinder, whilst the other end is supported upon a moveable metallic staff, near which is a screw which presses cover and cylinder together to any degree of strength required, as represented in Fig. 2. A piece of cork is finally applied over the end of the needle.

FIG. 2.



This mode of proceeding was first brought before the profession in this country at the Medico-Chirurgical Society in 1854, and in the United States of America in the earlier part of the same year. With regard to the operation, its object is to close the inguinal canal altogether, by invaginating a portion of the scrotum, which becomes retained by adhesive inflammation. This cannot be effected in all cases of this form of hernia, as in old people and others with a long existing rupture the canal is wide and short, its walls are relaxed, and the large circumference of both rings form impediments to a successful union. In such cases the operation should not be tried. On the other hand, young, healthy, robust persons whose age may not exceed forty years, who are engaged in active pursuits, and whose inguinal canals are not perceptibly altered in form, nor in structure, offer the most favourable chances of success. Of 57 cases referred to in 1854, no death or dangerous symptoms followed in any one, and the proportional success was large. Up to the present moment, however, this operation has been performed twelve times by British surgeons, without any bad symptoms in any case and no relapse.

We hope this important operation will meet with a fair trial at the hands of our hospital surgeons, when we will again refer to the subject.

Thomas B——, aged thirty, was admitted into Harley ward on October 7th. The patient is a fireman on board of one of her Majesty's steamships. The existence of an oblique inguinal hernia of the left side, which was quite reducible, and for which he wore a truss, prevented a continuation of his employment. He was ruptured several years ago when in the West Indies.

On the 11th of October, Wutzer's operation was performed as follows: The skin about the scrotum was carefully shaved, and the hernia was reduced, the patient lying on his back with his thighs flexed and raised. The point of the left forefinger was placed upon the scrotum, about an inch below the abdominal ring of the affected side. It was then carried, with its palmar surface directed upwards and outwards, through the ring into the canal, pushing the yielding skin of the scrotum into the canal as far as necessary, so that its apex of invagination would reach the internal ring. The cylinder, well oiled, was now introduced by the right hand, the finger being withdrawn as it entered. This was managed very nicely, with some manipulation. The cylinder being now completely within the canal, the needle was passed through it, the invaginated skin, and the external integuments; the cover plate was then placed over it, and gently pressed against the skin by means of the screw, and the end of the needle was covered with a piece of cork.

[On the 20th of October the instrument was removed, the invaginated portion of integument was adherent, and completely filled up the inguinal canal. There was a little suppuration where the needle passed through the skin, but in all other respects the man was well. He would wear a truss for a month or two, after which all support would be dispensed with.]—*Lancet, Nov.* 8, 1856, *p.* 511.

66.—THREE SUCCESSFUL CASES OF WUTZER'S OPERATION FOR THE RADICAL CURE OF INGUINAL HERNIA.

By Charles Vaudin, Esq., Jersey.

Case 1.—Monsieur le T——, aged forty-two, consulted me for an oblique inguinal hernia of the left side, which caused him much inconvenience. Upon examination, I discovered a strong tendency to the same affection on the right side. Being a remarkably healthy person, of temperate habits, I recommended Wützer's procedure to him, he being extremely anxious to be radically cured of this affection.

A brisk purgative of calomel and jalap having been given to him two days previously, on the 12th of May, the instrument was introduced, the plug coated with firm grease, and all the hair on the part to be invaginated plucked away. The needle was not protruded before I had the plug firmly in the canal, and in so doing, I managed to transfix the internal pillar of the external ring, or the structures immediately behind it, so that I was quite sure the integumental plug might be firmly opposed to the parts until it fairly adhered to them.

The patient kept his bed eight days, during which time I removed the plug once, wiped it and applied fresh grease, and returned it. The pressure of the instrument he regulated himself according to his feelings, so that he always felt it comfortably firm. Not a single unpleasant symptom occurred.

On the ninth day, the instrument was removed; a compress of oiled lint and a T-bandage was applied. He sat up the three following days a few hours each day, and then gradually resumed his former habits.

On the fourteenth day, the wound made by the stylet was quite healed; he preferred the bandage to a truss, and it was applied every day up to the twenty-eighth, when, the parts being so firm and well consolidated, the impulse on coughing being no more perceptible than in the normal condition, I enjoined him to wear a suspensory bandage, and to abstain from any exercise demanding extraordinary respiratory efforts.

Up to this period (Sept. 2nd) he is, as well as myself, perfectly satisfied with the results of the operation, and wishes to be operated upon on the other side, even before the hernial descent is complete, a proceeding I have of course advised him to leave until circumstances render it more requisite.

At the request of my friend, Mr. G. M. Jones, I append the two following cases, he having kindly furnished me with his notes of them.

Case 2.—N. N——, aged thirty-six, a labourer. Had inguinal hernia of the right side of eight years' standing, caused by lifting a heavy weight. He was a man of very intemperate habits. He had occasionally worn a truss, but only for a few days at a time. Trusses given to him by institutions were always sold in a few days, to procure drink. He was operated on January 5th, 1856. The instrument was removed on the ninth day. He remained in hospital six weeks, and wore a truss during that time. He was seen for the last time two months ago, and was then quite drunk. Had sold his truss the day after his discharge, and had not worn one since. He was examined then, and, anxious to prove how well he had recovered, nothing would satisfy him but coughing as loud as he was able, and jumping from a shop counter on his feet; this he did several times.

Case 3.—Thomas G——, aged 15, a Canadian; oblique inguinal hernia, two years. Operated on the 1st of April, 1856. The instrument remained in eight days, followed by no unpleasant symptom. The patient was heard of two months ago, and was then pursuing the active duties of a cabin boy, and wore no truss.

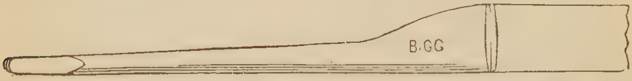
The paper by Mr. Wells in the "Medico-Chirurgical Transactions," vol. xxxvii., affords information to those desirous of testing the merits of this new proceeding. In conclusion I will add, that it has struck me in my observation of these three cases, that only just sufficient pressure should be applied, by means of the upper plate and screw, to keep the parts in close apposition. Undue pressure not only gives severe pain, but produces a retardation of the union process. I would suggest, also, the liberation, by incision, of the margins of the invaginated integument, including the dartos and cremaster; the action of these, even independent of that of the other perineal muscles, in ordinary and extraordinary respiratory efforts, seems to have a tendency to draw upon the integumental plug; hence I am led to think this liberation might be an improvement, and mean to give it a trial. Adhesion of the parietes of the plug might also be a desirable occurrence.

and this could be effected by the actual cautery, or the chloride of zinc.

Mr. Coxeter kindly modified the instrument for me in the following way :—The needle, or stylet, was strongly gilt to prevent its corrosion, and its extremity eye'd to allow of its more secure fixture to a cork. The handle was also made to unscrew, so as to prevent its entanglement in the patient's dress, or in any movements.—*Lancet, Oct.* 11, 1857, *p.* 404.

67.—*On Strangulated Femoral Hernia.* By JOHN BIRKETT, Esq., Surgeon to Guy's Hospital.—[The author observes, that the operation described below is scarcely more than a modification of the taxis. It might be called the minimum operation for the relief of a strangulated femoral hernia. Mr. Birkett says :]

To perform this operation, I have been in the habit of using a bistoury, which differs in shape from the ordinary hernia knife. It has a long straight shaft, terminated by a blunt end. Close to the blunted end, and extending about three-eighths of an inch from it, is a very slightly concave cutting edge. The cutting edge of the instrument is introduced beneath the tissues forming the crural ring, guided by the index-finger of the left hand, with its flat surface in contact with the anterior surface of the hernial sac, and its edge inwards. The handle is then turned outwards, which brings the sharp edge of the bistoury upwards and in contact with the tissues above it. In this manner they are freely divided, and the tip of the index-finger follows the incision thus made.—*Lancet, Dec.* 20, 1856, *p.* 671.



Representation of the straight, blunt-ended bistoury used for the division of the tissues about the neck of the hernial sac.

68.—*Expiratory Method of Performing the Taxis.*—Dr. ANDREW BUCHANAN states that he has successfully employed, during thirty-four years, the process described in the following paragraphs.

The patient is placed in the position usually recommended, or which may be deemed most suitable in the various forms of hernia, and the compressing force is applied in the usual way. The peculiarity of the method consists in this, that just before the force is applied, the patient is directed to make a very full expiration, and thereafter to refrain as long as possible from making a fresh inspiration ; or, as it is more intelligibly expressed to the uninitiated, he is directed to blow as much air out of his mouth as he possibly can, and to continue thereafter as long as he can without drawing a fresh breath. While this is going on, the operator, having made all necessary preliminary arrangements, attempts to return the hernia, beginning as soon as the expiration is a little advanced, and continuing his efforts gently but steadily during the whole period of suspended respiration. When the patient is at length compelled to draw a fresh breath, the pressure should be relaxed, so as not to oppose the force of the muscles of inspiration; but it should not be altogether given up, and as soon as the patient is a little recruited from his exhaustion, he is made to perform another expiration, and so the operation is continued as long as may be required. The first indication of success, consisting in a slight internal motion or gurgling noise in the tumour, almost universally occurs during the suspension of the breathing, and it is during the same period that the complete return of the hernia is usually effected.

There are some important minor details in the operation, which depend on the intelligence and strength of mind of the patient. If he possess both those mental qualities in a sufficient degree, he will be able, after making the full expiration, to refrain from inspiring by a voluntary effort. Such cases are the most favourable for the success of the operation. In other cases, and these cases occur more especially among females, the patient understands and acts fully upon the direction of blowing out the breath, but wants strength of mind for the subsequent control over the inspiratory muscles. In all such cases it is indispensable to have an assistant, whose duty it is, as soon as the expiration is completed, to apply his hands over the mouth and nose of the patient, so as to prevent inspiration for as long a period as may be deemed safe and advisable. If, however, the lungs can be sufficiently emptied, such cases are little less favourable than the former. Last of all, there are persons who, whether from natural stupidity or from fright and confusion of mind arising from the condition in which they are placed, cannot be made to comprehend and follow out the directions given them. In those cases the lungs are never emptied to the necessary degree, and the success of the operation is proportionally uncertain.

The theory of this operation is simple. In the first place, it dissassociates the diaphragm from the abdominal muscles, and, by preventing them from acting in concert, removes the chief obstacle to the reduction of hernia. Secondly, it weakens the muscular power of the body, and diverts it from the act of resistance.—*British Med. Journal, Jan.* 17, 1857, *p.* 49.

69.—ON AMUSSAT'S OPERATION.

By John Erichsen, Esq., Professor of Surgery at University College, and Surgeon to the Hospital.

[Mr. Erichsen observed that the principle on which Amussat's operation is founded is to establish an artificial anus without wounding the peritoneum, by opening the posterior third of the descending colon in the left lumbar region, where that portion of the gut has no serous investment.]

The anatomy of the parts concerned, and the steps of the operation, must first engage our attention. The point of most importance is the relation of the descending colon to the peritoneum in the left lumbar region. In order to study this, you should dissect the body from *behind.* In an ordinary dissection or in a dead-house examination, the body being opened from the front, the colon is drawn forwards, and thus a distinct and somewhat elongated mesocolon will be formed in the left lumbar region. But this mesocolon is in a great measure formed by the traction of the dissector tearing off the reflexions of the peritoneum in the lumbar region, and does not naturally exist, as will be seen on making the dissection from behind, when the posterior third of the descending colon will be found lying closely against the cellulo-adipose layers that line the abdominal wall in this situation. It will be seen to be uncovered by peritoneum, and to have no loose or floating mesocolon; but the serous reflexion will be found to be closely applied to the wall of the abdomen on each side of the gut. It is, however, very important to observe that the extent of gut that is uncovered by peritoneum will vary according as the colon is contracted or distended. When empty and contracted the peritoneal reflexions come into very close apposition, and nearly overlay the naked portion of gut; but when this is distended they are pushed aside as it were, and a broad expanse of colon will be seen to be uncovered by peritoneum. The facility of exposing the uncovered part of the colon, without wounding the peritoneum, will be in the exact relation of its amount of distention.

The region in which the operation it performed is bounded above by the last false rib; below, by the crest of the ilium; behind, by the lumbar spine; and in front by an imaginary mesial lateral line. In this oblong quadrilateral space, a horizontal incision should be made, commencing two fingers' breadth to the left side of the spinous processes of the lumbar vertebræ, and carried horizontally outwards for about four inches midway between the last rib and the crest of the ilium. After the integumental layers are divided, the anterior edge of the latissimus dorsi and the posterior part of the abdominal muscles are successively divided. The dissection is carried down through these, until the transversalis fascia is reached; the anterior and middle lamellæ of this are opened, and the edge of the quadratus lumborum exposed. The real difficulties of the operation now commence; the surgeon having to dissect carefully through layers of cellulo-adipose tissue which lie in front of the abdominal wall, and which cover in the colon and the continuous reflexions of peritoneum. If the gut is distended, this tissue will be pushed well aside, and the intestine may easily be reached; but if it be contracted and empty, it will be found to recede somewhat from the surface, to lie at a great depth, and to be almost overlapped by the reflexions of the peritoneum, to avoid wounding which requires the greatest care. It is also covered in by a quantity of loose cellulo-adipose tissue, which, as it rises and falls, with the respiratory movements, presents a considerable resemblance to the peristaltic motions of the small intestine, for which it may be at first mistaken. After having worked his way through this tissue, the colon will be exposed towards the other angle of the wound. This gut can at once be recognised from any other structure by its greyish-green hue, the longitudinal striæ on its posterior surface, and its thicker feel. When exposed, a needle, carrying a strong whipcord should be passed through it in a vertical direction, and the gut being thus drawn to the surface, may be properly opened and stitched to the edges of the wound.

Commonly the colon will be found lying vertically across the wound in a line corresponding to the outer edge of the quadratus lumborum, and the "directing line" to it may be said to be the line of aponeurotic structure, formed by the juncture of the two lamellæ of the transversalis fascia that constitute the sheath of the quadratus, and which may readily be distinguished by its colour from the muscular structures across which it lies, as it traverses the incision in a perpendicular direction. Below this, the colon when distended will always be found; but when contracted, it retreats beneath the quadratus, and the anterior edge of this muscle must be divided before it can be exposed.

There is one caution I have to give you about opening the colon. It is that the gut should be well drawn forwards before it is punctured, fully on a level with the skin, in order that its contents may not be extravasated into the loose cellular tissue around it, and, when opened, the edge of the aperture must be stitched to those of the incisions in the skin.

The next point that we have to consider is the class of cases in which this operation is required. These are threefold—1st, fæculent distension supervening in obstruction of the rectum or sigmoid flexure of the colon, or arising from the pressure of tumours, the blocking up of the gut by cancerous disease, or the gradual closure of a stricture; 2ndly, for congenital absence of the rectum; and 3rdly, for the relief of pain in ulcerated cancer of the rectum. Thus you will observe that the operation may be performed on two different principles—first, for the relief of intestinal obstruction, by affording a vent to the pent-up intestinal contents, where the lower portion of the intestinal tube is blocked up or is congenitally absent; and secondly, on a totally different principle, in cases in which there is no retention of fæces, but in which the patient is worn out by the agonizing suffering induced by the passage of the fæculent matters over the raw and ulcerated surface of a cancerous rectum. In these cases defæcation is a horrible torture, the pain of which is dreaded by the patient, in consequence of which he defers the act as long as possible, and when it does take place the suffering induced is such, that for hours afterwards he will lie in an exhausted state. The constant recurrence of such suffering speedily wears out the strongest frame, and the passage of the fæculent matters through the ulcerated rectum stimulates the activity of the cancerous disease, which thus makes more rapid and extensive ravages than it otherwise would, and hastens the fatal termination of the case.

(1.) I will not dwell at present on the performance of Amassat's operation in cases of intestinal obstruction; but I may remind you that it is of course only in the *chronic* form of the disease that it is applicable. *Acute* intestinal obstruction almost invariably proceeds from internal strangulation or intussusception of the *small* intestine, and here of course the procedure that we are now discussing can afford no relief; but *chronic* intestinal obstruction is almost invariably—I believe, invariably—dependent on disease implicating the large intestine, and such disease is, in the vast majority of instances, seated below the descending colon, at the upper part of the rectum, or in the sigmoid flexure. When such is the case, the opening of the colon in the left lumbar region will afford the required relief. In these instances, the operation is comparatively easy; the gut is enormously distended, presses forcibly against the posterior abdominal wall, and pushes widely aside the lateral reflexions of peritoneum, so as to leave a large surface uncovered by serous membrane. I was present, many years ago, at the first operation of this kind that M. Amussat performed, and I shall never forget the immense rush of flatus and fæces that took place, and the instantaneous relief that ensued when the gut was punctured, the obstruction having lasted more than forty days. In cases such as these, some surgeons prefer opening the cæcum in the right lumbar region; but as the transverse colon is very rarely, if ever, the seat of the stricture, I cannot see any advantage in departing from the operation as recommended by Amussat.

(2.) In cases of congenital absence of the rectum—not of simple imperforate anus—Amussat's operation has occasionally been attempted, but its performance in such cases is full of difficulty, on account of the narrowness of the part in which the surgeon has to work, the depth of the gut from the surface, its small size, and its occasional malposition. I am not aware that its performance in this malformation has been attended by any permanent benefit, and should, in preference, feel disposed to do what we have had occasion, to practice here several times of late years—viz., the establishment of an artificial anus in its normal situation.—*Lancet, Jan.* 17, 1857 *p.* 55.

70.—*The Distinction between External and Internal Piles.*—It is a very common mistake with students to confound external with extruded piles, and to call those internal which are out of sight, and those external which are visible. We need not say that this is an utterly false nomenclature. External piles are those which form without (external to) the circumferential margin of the sphincter, and are consequently always covered with skin; internal ones are those which are within the sphincter, (not above it,) and are covered by mucous membrane. External piles consequently are always dry and cuticular, internal ones moist and slimy. The external have a light uniform bluish tinge, varying according to the density of the skin over them; internal ones are bright and florid, or from all the shades of florid to those of livid and purple, according to the intensity of their congestion. External piles almost never bleed; internal ones almost always do so. External piles are dilated hemorrhoidal veins; internal ones are of a very different nature. External piles may be cut away with impunity, while to tie them would risk phlebitis and purulent absorption. Internal piles may be tied with safety, while to excise them is to risk fearful, and it may be fatal, hemorrhage. It is most important to understand clearly that the difference is one of kind and not of mere position.—*Med. Times and Gazette, March* 14, 1857, *p.* 262

71.—WHAT ARE INTERNAL HEMORRHOIDS?

Preparatory to entering upon any questions as to their treatment we must a little clear the way by a few words as to the real nature of internal hemorrhoids. That "internal piles," in their ordinary form, are dilated or varicose veins of the anus, may now safely be pronounced a relic of bygone and very mistaken pathology. If cut across they bleed most profusely; but the hemorrhage is arterial, not venous; and if tied, there is little or no risk of phlebitis. On dissection they show scattered, small, venous cysts, but these are minute in proportion to the mass; and should a large coagulum be found, it has more the appearance of being the result of extravasation than the contents of a varix. They are not at all more liable to occur in those who suffer from varices in the legs, &c., or varicocele, than in others. The *dilatatio venarum* theory has, indeed, been specifically renounced by most of the recent teachers and writers on the subject. Mr. Salmon is very positive in his opinion on this point, and he is supported to the full by Mr. Ashton and Mr. Syme. And here the distinction between external and internal piles must be borne in mind; the former, a rare and comparatively unimportant form, are admitted by all to be venous. External piles have, when the skin is thin, the uniform bluish tint of a vein, which cannot well be mistaken, while the purple colour of the internal one rather resembles that of the intense congestion of almost strangulated mucous membrane. External piles may be snipped off, and there is no danger of bleeding after the vein has once emptied itself; internal ones, if cut away, bleed continuously and profusely, and their hemorrhage, as just stated, is arterial, not venous.

We come, then, to the question, What are internal hemorrhoids? and to this the answer must be, that they consist of prolapsed folds of of the mucous membrane lining the sphincter, extremely vascular, and hypertrophied and thickened by long constriction. In children the parts about the rectum, the sphincter, &c., are lax, and the mucous membrane is very loosely connected to the muscular one; hence their liability to large prolapse, which in them always comprises the whole circumference of the bowel. In adults, however, the sphincter is more firm, and the mucous and muscular coats much more closely connected; hence the great rarity of circular prolapse. From the necessity that the mucous membrane lining the sphincter itself should be capable of wide dilatation during defæcation, an arrangement has resulted, however, by which, during the closed state of that muscle, it is thrown into longitudinal folds, which are smoothed out when it opens. Between these folds, which, first described by Morgagni, are known as Morgagni's columns, the mucous and muscular coats are more closely united to each other, whilst, beneath them, the intervening cellular tissue is, of course, loose. These columns vary in number from three to six. By reference to this arrangement, the reason why extruded piles almost always present the appearance of being divided into lobes is easy to be assigned.* Mr. Salmon defines piles as prolapsed Morgagnian columns, hypertrophied and rendered vascular by constriction, and states that their divisions into segments correspond in number with the number of the columns in the individual. Thus, then, we have it clearly explained upon anatomical grounds why children almost never have piles, and why adults so very rarely have circular prolapse, and also why adults who have circular prolapse never have "piles," as a complication; the latter fact being one, which, upon the old view of their being distinct conditions, it would be very difficult to account for. We have already adverted to the importance, in respect to treatment, of this view of their nature, and how well it coincides with the results of practice. No one would fear ill consequences from tying up a mass of congested and thickened mucous membrane, while every surgeon would shrink from the risk attendant on putting ligatures on bunches of inflamed veins.†—*Med. Times and Gazette, March* 21, 1857, *p.* 285.

72.—*Internal Hemorrhoids ought never to be Excised.*—There are few principles more unquestionably established in British surgery than that on account of the risk of uncontrollable hemorrhage internal piles ought never to be excised. In this rule Sir Astley Cooper, Sir B. Brodie, Mr. Salmon, Mr. Curling, Mr. Quain, Mr. Ashton, Mr. Syme, and Dr. Brooke, all emphatically concur.—*Med. Times and Gazette, March* 21, 1857, *p.* 285.

* It is this division in lobes which has so much strengthened the idea of their being dilated veins.

† It is but right to state that the reader will find opinions widely differing from the above, as to the nature of internal hæmorrhoids, in the works of Mr. Curling and Mr. Quain. That dilated veins are sometimes met with, constituting internal piles, is fully admitted; we believe, however, that it is exceedingly rare and exceptional.

73.—ON THE LIGATURE OF INTERNAL PILES.

An opinion prevails that the ligature of hemorrhoids is attended with considerable risk from phlebitis, peritonitis, pelvic abscesses, &c.. On this point we may place together the following statements of experience:—Mr. Curling writes, "No fatal case has come under my own notice, either in public or private practice." Mr. Salmon the other day stated to his clinique that he had never lost a case from phlebitis, and but one from tetanus; and this it must be noticed is after an experience very large indeed, no week passing at St. Mark's in which several cases are not so treated. Mr. Coulson stated at a discussion at the Medical Society that he had never lost a patient after ligature of piles, and it is a favourite operation with him. At Guy's Mr. Cock and Mr. Hilton both frequently use the ligature, and speak of its dangers as very trivial. Sir B. Brodie never operates except by ligature, and states that "there is no objection to it." In 1835, he had lost but two patients from its application. Sir Astley Cooper, after having, as is well known, lost several patients from excision, always employed ligatures. Mr. Ashton speaks most favourably of the practice by ligature, but does not enter into details as to any fatality it may have had under his observation. Mr. Quain states that he has met with but one fatal case. Mr. Copeland also mentions having had one. Mr. Quain writes, "An unfavourable, or even an unsatisfactory termination is of extremely rare occurrence." Mr. Syme writes (1846), "In the whole of my practice I never met with a case which either terminated fatally or threatened to do so."

In the course of nearly four years of tolerably intimate acquaintanceship with the practice of most of the London Hospitals, the writer has not heard of any single fatality after tying piles; and our "Provincial Hospital Reports" have included but one, and that the only one we have had to record during the same period. In it the patient was an old and much diseased man, and death from a low form of peritonitis with questionable pyæmia followed on the eighteenth day. See 'Medical Times and Gazette' for July 19, 1856, page 63. It is worthy of note that in this case a cuticular external, and, therefore, probably a venous pile, was tied.

With the above amount of evidence before us, we may fairly conclude that ill consequences after ligature of piles, performed in moderately healthy persons, and with due attention to the exclusion of dilated veins, are exceedingly rare, and that the operation is a perfectly safe procedure.—*Med. Times and Gazette, March* 21, 1857, *p.* 285.

74.—ON THE METHOD OF APPLYING THE LIGATURE TO INTERNAL PILES.

The plan in general use of applying the ligature to piles is by means of a curved needle fixed in a handle, with which the pile is transfixed, and the threads having been drawn through and separated, the mass is tied in two halves. This is the plan recommended by Mr. Syme, Mr. Curling, and Mr. Ashton, in their respective works, and adopted, we believe, with but little modification, by most London surgeons, Mr. Salmon excepted. The plan pursued by the latter surgeon appears to us to have some important advantages over the other; and we shall, therefore, describe it in detail. Before doing so, it may be observed, that the objections offered to the old method are—1st. That it is sometimes difficult to get the ligature sufficiently deep on the base of the pile. 2nd. That the piles are often not isolated laterally, but join one with another, and thus prevent the ligature from getting between them. 3rd. That, by tying so thick a mass, and often also including portions of skin, much more pain is caused than is necessary. Mr. Salmon states that he often sees cases which have been treated by the ligature in its old method of application, in which the pile has been cut through its middle instead of being taken away completely. The instruments used by him are a pair of knife-bladed scissors and a toothed tenaculum. No needle is employed. Immediately prior to the operation an enema is given so as to wash out the gut above, and at the same time bring the hemorrhoids down into view. The patient is then placed on his side on a high table, with the knees drawn up to the abdomen. An assistant elevating the buttock, the tenaculum is passed into the gut with its teeth looking outwards, and made to seize the pile which it is intended to tie. The latter is then drawn downwards, and held away from the margin of the sphincter while the operator with the scissors in his right hand makes a deep gash just at the margin of the junction of the skin and mucous membrane. The pile is yet further isolated by incisions with the scissors on each side, and is thus left with its mucous membrane only uncut. The incision separating it from the circumference of the gut is often, if the pile be large, an inch or an inch and a half deep, passing up parallel with the bowel. Lastly, a ligature of strong waxed silk is applied in the tract of this deep wound, the part actually tied often consisting of little more than mucous and submucous tissue. All the piles present having been tied, rarely in more than four segments, and generally in not more than three, any redundant folds of skin external to the incisions or external piles which may be present are snipped away. The ligatures are cut off long, and the piles are not returned, but carefully kept protruded. The first dressing is a compress of cotton wool, or a piece of sponge, and a nurse having been allotted to each patient, is instructed to sit with the hand lightly pressed against the part, and to take care that bleeding does not occur. On the following morning a bread poultice is substituted for the wool, and continued until the tension of the parts has subsided. The piles are considered due on the tenth day, and generally for some days prior to this the patient has been allowed to be up, and upon the couch in the day-room. Throughout the strictest attention to cleanliness is enforced, and all discharges carefully washed away. From the observation of many cases there cannot, we think, be any doubt as to the very superior efficacy of this method of applying the ligature over others, and can conceive of but one objection which can be alleged against it; that is as to its risk of bleeding. Mr. Salmon holds that the pile is generally fed by a single large artery which runs usually just beneath the mucous membrane, and in a straight direction from above downwards. A very free incision from without, and passing up parallel with the surface of the sphincter, may therefore be made without endangering this vessel. Then again, the not cutting away the ends of the ligatures, and not returning the piles, are great safeguards against hemorrhage, and should it happen, much facilitate the measures for its arrest. To appeal to experience, we believe that the results which have been obtained through a long series of years at St. Mark's justify Mr. Salmon in holding the risk of hemorrhage to be no objection whatever to the operation.

[Mr. Curling, in a note to the Editor of the 'Medical Times and Gazette,' speaking with regard to the foregoing paper, says:]

These remarks convey an insufficient and incorrect impression of the plan of operating employed by myself. In that plan no difficulty whatever is experienced in applying the ligature to the base of the pile. Figures are given of some hooks used by Mr. Salmon, but no mention is made of the forceps (described and figured in my work on the Rectum, second edition), and often used in hospital practice, for grasping and drawing down the pile, an instrument most effectual in enabling the surgeon to expose it, and one, in my judgment, better suited to the purpose than hooks, which are apt to lacerate the parts, and cause bleeding. The reporter also omits all notice of the recommendation which I have given, viz., "When the hemorrhoids are large in size, a notch made with scissors on each side at the part to be girt with the ligature, just before it is tightened, will facilitate the separation without any risk of bleeding." The free division of the hypertrophied mucous membrane, which I now generally make in operating on piles, obviates both the second and third objections above stated. Undivided skin is never included in the ligature.—*Med. Times and Gazette, April* 18 *and* 25, 1857, *pp.* 386, 420.

75.—CONSTITUTIONAL TREATMENT OF PILES.

Before passing to the other methods of treating hemorrhoids by local means we must say a word or two of their constitutional treatment. In a proportion of cases, very large indeed, constipation has been an antecedent to their appearance. The old theory of their depending in any great number of instances upon torpidity and engorgement of the liver must, together with the notion of their consisting of dilated veins, be laid aside. Every one of experience will admit that a very large majority of patients suffering from hemorrhoids have no indications of material hepatic disturbance. Nay, often until the "attack of piles" they state that their health had been perfectly good. Without denying that hepatic torpor may in some instances predispose to them, we must yet assert that the majority acknowledge that a more mechanical causation exists. Referring to the opinion as to their nature, that they consist of prolapsed and thickened Morganian columns, we shall have no difficulty in seeing how the impaction of indurated fæces in the lower part of the rectum, and violent strainings for their expulsion, may tend to produce them. When once they have been forced down the rationale of their subsequent increase both in size and vascularity is easily explicable. Looked at from this point of view their constitutional treatment also resolves itself into very simple measures. To empty the rectum, to keep the motions habitually relaxed, and, if possible, to restore tone to the mucous membrane, are indeed its main objects. The exhibition either of blue pill and castor oil, and of repeated small doses of epsom salts, the former being, perhaps, the more preferable, will meet the first two of these. The third is much less within grasp, and to its achievement the use of tonics, especially of nux vomica, offer the best, but still only a very uncertain means.—*Med. Times and Gazette, April* 18, 1857, *p.* 387.

76.—ON THE TREATMENT OF PILES AND PROLAPSUS OF THE RECTUM.

By Henry Smith, Esq., London.

[In the course of some very interesting remarks on the treatment of piles by ligature, reported in the Medical Times and Gazette, it was stated that this operation was "a perfectly safe procedure," although Sir B. Brodie has lost two patients from the application of the ligature, and other gentlemen have also seen death from it. Mr. Smith in reference to this says,]

I am most willing to admit that the ligature is the most effectual remedy in removing hemorrhoidal excrescences which have existed for a long time, and have perhaps induced, or become complicated by, prolapsus of the gut. Nevertheless, I do not believe, from what I have seen and know, that any surgeon can conscientiously tell a patient that the operation by ligature is a "perfectly safe procedure." Cases of death after this operation have occurred, and have not been made known to the profession; moreover the operation is attended sometimes with extreme suffering, such as I have not often witnessed after other surgical proceedings; it is necessary that the patient should keep to his bed for several days, and after all, the operation occasionally fails.

There is, however, a remedy which, in a very considerable proportion of cases of piles requiring active surgical interference, may be looked upon as perfectly safe. I mean, nitric acid. Those gentlemen who have most frequently used it, viz., Dr. Houston of Dublin, and

Mr. Henry Lee, speak highly in its favour; it has occurred to myself to employ it in a considerable number of cases both in public and in private practice, and it has been attended with remarkable success, not in simple uncomplicated cases, but where the disease has existed as long as twenty years, and has been attended with most urgent suffering; also in cases of prolapsus of the rectum which have existed for a period of many years, and have been considered by the patients to be incurable. I have, on former occasions, published some cases of the kind in your journal, and I have lately had under my care two cases of prolapsus of the gut where the treatment by nitric acid was eminently useful.

The one patient was a man, aged 66, who had suffered for fifteen years, not only with the prolapse when at stool, but the simple exertion of walking brought the gut down. One free application of the acid sufficed to remedy this condition. The other was a gentleman, betwen 50 and 60, who had for many years suffered from prolapsus to a great extent. In this case I hesitated in giving a prognosis as to the result of treatment by nitric acid, and mentioned the possibility, and even probability, of the ligature being required. However, three applications of the acid sufficed to restore this gentleman to comfort from misery, without a single day's confinement.

This treatment, like others, will occasionally fail. I have had two cases in females where I did not succeed in removing the diseased condition of the rectum to my satisfaction, and of course cases will be repeatedly met with where the ligature is absolutely necessary. Nevertheless, experience has convinced me that the ligature is employed much more frequently than it ought to be, and that in numerous cases, both of internal piles and prolapsus, its use, which is now and then followed by death, is attended with great suffering, and necessary confinement to bed, and should be dispensed with, in favour of the nitric acid, a remedy more safe and as effectual.

With reference to the permanency of cure after nitric acid, I may mention that I accidentally met an old gentleman, a few days ago who had three years previously submitted to treatment by nitric acid for hemorrhoids of twenty years' standing, attended with profuse hemorrhage and suffering. He told me that the cure I had brought about had continued complete.

[Mr. Smith has not given a just impression as to the statement referred to, from omitting the context to it, which is as follows:—"With the above amount of evidence before us, we may fairly conclude that ill consequences after ligature of piles, performed in moderately healthy persons, and with due attention to the exclusion of dilated veins, are exceedingly rare, and that the operation is a perfectly safe procedure." It is to be observed that Mr. Smith does not give us a single additional fact as to the danger of the ligature. The question is one of fact and not of opinion.—Ed. *Med. Times and Gazette.*]—*Med. Times and Gazette, April* 4, 1857, *p.* 347.

77.—CASE OF EXTERNAL AND INTERNAL HEMORRHOIDAL TUMOURS.

By W. D. Husband, Esq., Surgeon to the York County Hospital.

[A man, aged 26, was admitted on Sept. 25, 1856. He had been suffering for years from piles, which had bled to a considerable amount, as evidenced by his anæmic aspect. The tumours continued increasing in spite of treatment, the bleeding became more frequent, and his health was very much impaired.]

On examination, the margin of the anus was found to be surrounded by hemorrhoidal tumours of large size; and, on the effort of straining being made, large masses of dark coloured congested internal piles were forced down, in some of which ulceration had evidently commenced, and the exposed surface bled on the slightest touch. The surrounding healthy bowel having been well protected by oil, the internal tumours were freely touched with strong nitric acid, by means of a glass brush; the whole mass was then coated with oil, and returned beyond the sphincter. An opiate was given, and the patient sent to bed.

Sept. 30th. The part to which the acid was applied had sloughed away, leaving a much reduced growth, with a healthy healing surface; and the patient stated that he suffered very little pain from the application of the acid.

Oct. 8th. The acid was again applied, as the internal tumours have not entirely disappeared.

Oct. 16th. No trace of the internal hemorrhoids could be detected; but, as the external tumours remained undiminished, ligatures were applied to the two largest. A double ligature was passed through each tumour; the skin was divided in the line of ligature; and then both were drawn very tightly, and tied.

Oct. 19th. The ligatures had come away, leaving a healthy suppurating surface.

Oct. 25th. An *écraseur*, obtained after much delay from Paris, was used to remove the two remaining external piles. The tumours were drawn out as far as possible with dressing forceps, and the *écraseur* applied successively to the neck of each. The first was removed rather too rapidly, and some little bleeding occurred; but, in removing the next, the screw was turned very slowly, and no bleeding at all resulted. The patient was placed under the influence of chloroform; hence no information could be obtained as to the amount of pain produced by the crushing operation of the instrument.

Oct. 26th. On my inquiring for the patient this morning, I found that he had suffered no pain since the operation, and was then walking in the garden of the hospital.

Remarks.—Since the candid confessions of Dupuytren and Sir A. Cooper, supported by the recent experience of Quain and other writers, as to the danger of removing internal piles by the knife, surgeons have very properly abandoned an operation fraught with such terrible risk to the life of the patient and reputation of the operator. The ligature has hence become generally adapted for the removal of internal piles. Mr. Quain strongly advacates its use, and says, "I have no fear of any unfavourable result, provided the precautions to be hereafter mentioned are observed." I agree with Mr. Quain in believing the ligature to be generally, when properly used, a safe and efficient remedy; but, at the same time, fatal results do occur, from pyæmia, &c., as the medical journals testify; and I have found the nitric acid less painful, free from all the dangers of the ligature, and quite as efficient; while in the timid patient, male or female, it excites no apprehension, and is never objected to, should a second application be required.

Mr. Quain, to whom we are much indebted for his valuable contribution to rectal surgery, speaks somewhat slightingly of the use of nitric acid, "Other means," says he, "have been used for the removal of hemorrhoids: for instance, nitric acid and the actual cautery. The acid is an uncertain application." I have used the acid in many cases, both in private and hospital practice, and have found it anything but uncertain in its effects. When applied effectually, as recommended by Dr. Houston, the tumour and bleeding surface of the congested mucous membrane which covers the piles is destroyed; the slough caused by the acid soon comes away; a healthy granulating surface is produced, which heals rapidly, and by its contraction produces a beneficial and curative pressure on the subjacent distended hemorrhoidal vessels. When applied too timidly, the acid is indeed an uncertain application; but the same may be said of every remedial agent when not used so as to produce the required effect. I can from repeated use fully subscribe to the words of Dr. Druitt in the last edition of his useful manual, when he says, "It is difficult to exaggerate the benefits of this plan of treatment. It seldom causes pain or any ill consequences."

With regard to the external piles, I was induced to adopt the ligature to avoid all chance of hemorrhage in a patient who presented the anæmic condition so fully. The ligature to external piles, when applied without division of the skin by the knife, is a painful and unjustifiable proceeding, and is very properly denounced as such by Mr. Quain and other writers; but the former allows that "the external hemorrhoid may be tied without ill consequence, provided the skin is completely divided in the track of the ligature before it is drawn tight," or, "if the skin be turned back before the ligature is applied." This plan I have always adopted; but in future I imagine that the *écraseur* will supersede the use of all other agents for the removal of external piles. In this case, especially when applied more slowly to the growth last removed, it effected a bloodless and entire removal of the hemorrhoid, with no after inconvenience to the patient; and chloroform enabled us to render the immediate effect a painless proceeding.

I believe that in this instrument we possess a useful agent for the removal of pendulous growths, and even deep seated morbid growths after the integument is reflected from them; but I can scarcely hope to see it realise some of those somewhat romantic anticipations in which our sanguine Gallic brethren have lately indulged.—*Association Med. Jour. Nov.* 15, 1857, *p.* 969.

78.—REMOVAL OF HEMORRHOIDAL TUMOURS BY THE ECRASEUR.

By A. T. H. Waters, Esq., Surgeon to the Liverpool North Dispensary.

Case 1.—A man sufferred from an extensive growth of internal hemorrhoids, forming a complete bunch round the margin of the anus, when protruded from the gut. The patient had lost a good deal of blood from time to time, and was in consequence much reduced. Chloroform having been administered, and the piles seized by a vulsellum, the chain of the *écraseur* was applied, first to one portion of the mass, and subsequently to a second portion. In about three and a half minutes the separation of each morbid growth was effected. There was slight bleeding at the time, but it very soon ceased, and there was no recurrence. The patient has progressed without a single unfavourable symptom, and is now convalescent. The freedom from pain and irritation after the operation was remarkable.

Case 2.—A woman suffered from internal hemorrhoids, and a prolapsed condition of the mucous membrane of the rectum. Chloroform was again used. The diseased structure was removed by two applications of the instrument, being first seized and pulled down by a vulsellum. Only a few drops of blood were lost.

For some time previous to the operation, the woman had suffered from excessive irritation of the bladder, being obliged to pass water four or five times every hour, the attempts being accompanied with great bearing down of the rectum. After the operation, although told to keep perfectly quiet, she got up several times in the course of a few hours to pass water, and there was much straining of the rectum; a small quantity of blood was lost, but only a small quantity, and the hemorrhage soon ceased. An opiate which was ordered for her was accidentally omitted, or this might possibly have been avoided. The small amount of hemorrhage that took place during such violent straining efforts, proves how effectually the instrument strangles the vessels. The patient has progressed without an unfavourable symptom, the pain has been very slight, and the irritation of the bladder less than before the operation.

Both these patients were operated on, in the presence of my colleagues, at the Dispensary.

The instrument I used was one manufactured by Luer. It is worked by a screw, and the chain which divides the structures to be removed, is gradually drawn into a cylinder, through which the chain runs. Two links, opposite each other, are simultaneously withdrawn; each link is about the third of an inch long, and it requires twenty-six revolutions of the handle which turns the screw to shorten the chain to the extent of a link. The screw is, I think, an improvement on the racket and pinion movement, with which some of the instruments are made, as by its means the tumours can more gradually and without any sudden shortening of the chain be removed.

The term *écraseur* seems to me less applicable to the instrument than *étrangleur.*

Luer's instrument is more expensive than one on the same principle made by Charrière; but having examined both, I believe one is equally good with the other.

Before operating on the above cases, I removed the thigh of a rabbit with the instrument. There was no hemorrhage; the muscles were cleanly divided; but the skin was dragged into the interior of the cylinder by the chain. There is a chance of such an occurrence in using the instrument on loose mucous membranes, but it is of little moment.

Having used chloroform in these cases, I am unable to speak as to the amount of pain the instrument causes; but with reference to its value, as far as I can judge, it is likely to supersede the use of ligatures and the knife for the removal of internal and external hemorrhoids, and some tumours in other situations; but of its applicability to some of the cases, in which its inventor has used it, I should entertain serious doubts.—*Association Med. Journal, Oct.* 18, 1856, *p.* 882.

79.—*Perchloride of Iron in Hemorrhoids.*—M. Thierry states that he treats hemorrhoids, even when large, by first blistering them, and then applying the perchloride of iron to the denuded surface, under the influence of which they shrink and disappear. The cure may not be radical, and they may reappear under the influence of the causes that originally produced them; but this is only the case after a considerable period, and in the meantime health is restored and occupation resumed. M. Thierry employs the same treatment with success in varix.—*Union Méd.—Med. Times and Gazette, March* 14, 1857, *p.* 269.

80.—*Prevention of Hemorrhage after Operations on the Rectum.*—In the operations for fistula and for fissure Mr. Salmon makes very free and deep incisions; and, indeed, his rule in the former, of cutting the base of the sinus as well as the sphincter, necessarily involves an extent of incision at least three times that usually employed. We adverted last week to his opinion that the use of chloroform much increased the liability to hemorrhage, and we may now mention other precautions adopted in his practice. The first is the use of cotton-wool instead of lint, as a dressing. Immediately after the incisions are completed, a large plug, of the finest jeweller's wool, is introduced into the gut, and pressed gently into the whole length of the wound. There is some art in accomplishing this neatly and efficiently. A metal probe, the thickness of a quill, should be used, and the forefinger of the left hand having been first passed into the bowel, the latter is held well open, away from the wound; the tuft of wool is then pushed high up into the gut, and lastly pressed down on the line of incision. The wool must on no account be oiled, otherwise its object, as a restrainer of hemorrhage, will be defeated, since it is by its loose and absorbent texture that it forms so excellent a plug. Its softness prevents its becoming a source of irritation to the rectum, as a fold of lint of any size generally does. Each patient on being sent back to bed has a separate attendant allotted to him, whose duty it is to sit by him with a piece of sponge gently pressed against the anus, and to report any bleeding should it occur. No styptics are ever used; and we are informed that the actual cautery, which is deemed the one resource, has been employed at the hospital but twice during the lost two years. Continued pressure is the means which is almost invariably found efficient. Whilst on the subject of hemorrhage, we must note that Mr. Salmon never excises internal piles, a practice which, on account of the danger of uncontrollable bleeding, is, we believe, now reprobated by all surgeons.—*Med. Times and Gazette, March* 14, 1857, *p*. 261.

81.—*Calomel Ointment for Anal Fissures.*—The ointment which is in constant use at St. Mark's for small fissures about the anus, irritation, &c., consists of five grains of calomel to one drachm of lard, or still better, of elder-flower ointment. It is directed to be smeared gently (not rubbed) over the orifice, after washing the part with warm water. No dressing whatever is permitted to be worn. Ointments containing one or other mercurial preparation as their active constituent, have been favourites with most specialists in this department. The black oxide, so warmly commended by Copeland, enjoys, perhaps, the widest reputation. There is possibly not very much to choose between them, and with either most excellent results may often be obtained. Mr. Salmon has, however, a very strong preference for the calomel, and the conclusions of his experience are well worthy of being trusted.—*Med. Times and Gazette, Feb.* 28, 1857, *p*. 214.

ORGANS OF URINE AND GENERATION.

82.—CASE OF LITHOTOMY.

By W. R. Beaumont, Esq., late Professor of Surgery in the University of Toronto.

[The subject of the following operation was one who had the misfortune to conceive the idea of using a glass catheter. He used this for about a month, safely, and then whilst withdrawing it, broke off a portion about an inch and a half in length, which remained in the bladder, producing the usual symptoms of stone. At the end of seven or eight days Mr. Beaumont extracted it.]

The patient being placed in the usual position for lithotomy, and chloroform having been administered, I passed a large staff into the bladder, and with it felt the glass. The staff (grooved on the convex side) was held in the mesial plane and hooked-up towards the symphisis pubis. Whilst pressing from the rectum with the point of the left index-finger on the apex of the prostate, and against the staff, I pierced the raphé of the perinæum, *close* to the anterior margin of the anus, and carried the point of the knife, its back being towards the rectum, into the groove of the staff, as nearly as I could guess, close to the front of the prostate, to hit which part with the point of the knife, is in my opinion, the most difficult step of the operation. I next, in withdrawing the knife, made an incision in the mesial plane, cutting through the membranous part of the urethra to the extent of half an inch or more, and extending the incision through the raphé of the perinæum for an inch and a quarter in length; so that part of the external sphincter, and the point of junction of the transverse perinæum were divided, and possibly the spongy tissue of the bulb at its posterior and lower part. I next passed a large probe along the groove of the staff into the bladder, and the staff was withdrawn. I then very gradually, by a semi-rotatory motion, passed my left index-finger along the probe into the bladder, and felt the piece of glass-tube lying near the neck of the bladder, and across the mesial plane. The prostatic portion of the urethra soon became more dilated, and I was able to pass by the side of my finger a pair of polypus forceps, the blades of which I had grooved lengthwise, and lined with leather, the better to hold the glass, and to guard against its breaking when grasped by the forceps. I had no difficulty in seizing the glass crosswise, but it was only after a dozen attempts or more that I caught it endwise, in such a manner that the long axis of the tube was in the same right line with the long axis of the forceps, and then there was no difficulty in extracting it. When seized in any other manner, its extraction was of course impossible. The operation was therefore, as I had predicted, very long, and difficult of accomplishment. The amount of bleeding was about the same as is usual in the lateral operation. I passed an elastic catheter, No. 12, through the whole course of the urethra, and left it there. He took immediately half a drachm of Battley's solution.

[Twenty hours after the operation the catheter was removed, the urine passed freely through the urethra, but none by the wound, he felt well, his appetite was good, and his pulse 84. Ten days after the operation he was up and walking about, no urine had passed by the wound during the last three days. Fifteen days after the operation he left the hospital, feeling quite well, though somewhat reduced in flesh and strength.]—*Lancet, Jan.* 24, 1857, *p.* 83.

83.—ON MR. LISTON'S METHOD OF HOLDING THE KNIFE IN LITHOTOMY.

By James Miller, Esq., Professor of Surgery in the University of Edinburgh.

[In reference to the vexed question as to how Mr. Liston held his knife in the deep cut in lithotomy, Professor Miller considers Mr. Fergusson is right in the main. He has no remembrance of ever having seen Mr. Liston hold his knife as represented in his own diagram; but in deference to the evidence of Professor Pirrie of Aberdeen, a distinguished pupil of Mr. Liston's, he cannot refuse to admit that he must have *sometimes* held his knife as represented in the diagram. This difficulty, arising from Mr. Liston having himself devised and published the diagram—in this one respect faulty—admits, however, of explanation. Mr. Miller says]

Having been his pupil and class-assistant—having subsequently, as his private assistant, lived for years in his house—having then assisted him at his private operations, and been present at nearly all his public ones—and having had all the heavy work of maturing his "Elements of Surgery," I was thoroughly conversant with his thoughts on lithotomy at that time. These were, in regard to the knife: free external wound, sparing use of the knife in making way to the groove of the staff, (the forefinger of the left hand *dilating* much), and limitation of the prostatic wound to the anterior three-fourths of the gland, so as to leave intact what he called the "reflexion of the ileo-vesical fascia." This last was by far the most important indication in Mr. Liston's view; it was this that he mainly insisted on in his teaching. *The diagram in question was designed on purpose to illustrate that point;* and so thoroughly was his mind occupied by the limited incision of the prostate, and the entirety of the pelvic fascia at its base, that I believe he lost sight of the position of the hands altogether, with the exception of the forefinger of the left hand, the position of which he deemed very important as a guide to the knife and a protection to the rectum. I am the more satisfied of this as having been similarly affected myself. I never thought of the position of the hand as holding the knife, until my attention was directed to it by Mr. Fergusson: and no sooner did this happen than I became quite satisfied that the diagram was in that respect thoroughly ideal and inaccurate. Most certainly, in another edition of my "Practice of Surgery," I shall consider it my duty to insert a new diagram.

It can readily be understood how Mr. Liston, holding his hands before the artist *for an illustrative diagram of the deep wound*, might give another arrangement to his hands (mere accessories to the main point of the picture) than what would naturally come to him when actually busy in the perinæum; just as a teacher of writing or drawing, in directing a pupil's attention to the effect of a particular stroke or touch, may hold the pencil or pen otherwise than if he himself were engaged in the work. The teacher then thinks only of the point of the pencil or pen and its effect; and Mr. Liston, no doubt, when his hands were being delineated, was thinking only of the *point of his knife* and its relation to the fascia at the base of the prostate. That left entire, he considered his patient comparatively safe; that cut, he looked upon fatal urinary infiltration as all but inevitable.

On the whole, then, I am constrained by Professor Pirrie's statement to believe that Mr. Liston *sometimes* held his knife as represented in the diagram; while, on my own conviction, supported by the testimony of a large majority of the most competent witnesses, I am satisfied that the ordinary position of his hand was above the knife.

And I further believe that, if Mr. Liston had been interrogated on the subject at the time his diagram was made, his answer would have been to this effect: "It is of little consequence how you hold your knife, provided you do it firmly; guide its point carefully on the forefinger of your left hand, mind the base of the prostate, and don't cut that fascia."

Of one thing I am perfectly certain: the sole object of the blunt edge of the posterior part of the blade was to protect the rectum, and *not to rest his finger on*. It was a rule with him, in all operations, never to place his finger on the knife's blade. That was always left free, and he had a special dislike to the concealing of any part of it by his fingers, conceiving this to be wholly fatal to the grace as well as the precision of his operating.—*Lancet, Jan.* 24, 1857, *p.* 83.

84.—*On Mr. Liston's Method of Holding the Knife in Lithotomy.* By W. Cadge, Esq., Norwich.—[Mr. Cadge being anxious to reconcile the different assertions of eye-witnesses on this point, remarks:]

My testimony can only extend over the five years ending with the death of Mr. Liston; but during that time I had the opportunity of seeing nearly all, and assisting at a great many, of the operations he performed. I frequently held the staff for him, and often conversed with him on the subject, and I affirm that I never saw him hold the knife otherwise than as Mr. Fergusson describes—viz., with the forefinger on its back, and not edge. But I have Mr. Liston's confession of the error. Shortly after the publication of the last edition of the "Practical Surgery," and while examining a copy of the work, I reminded him of the discrepancy between his precept and his practice. He admitted it, but seemed unwilling to discuss the matter, merely remarking, that a surgeon who knew what he was about would soon discover the best manner of holding the knife, or words to that effect.

At the outset of his practice it is probable that Mr. Liston wished and recommended that the knife should be held as he represents; that he operated in the same manner, the evidence of Mr. Pirrie and Mr. Syme seems to prove; that he continued to do so I cannot admit—at all events, during the period I have named, when his experience was matured and his practice greatest. The plate once prepared, it continued to be transferred from one edition to another without change, long after its author had altered his practice.—*Lancet, Jan.* 24, 1857, *p.* 101.

85.—ON THE MEDIAN OPERATION OF LITHOTOMY.

By Dr. Kelburne King, Hull. (Communicated to the Medical Society of the Hull and East Riding School of Medicine.)

[In reference to the comparative mortality of the lateral and median operations of lithotomy, Dr. King having considered shock, hemorrhage, and infiltration of urine, which are less liable to occur in the latter than the former operation—and purulent deposits and peritonitis which are accidents occasionally attendant on all operations, observes, that the remaining source of danger, viz., inflammation of the neck of the bladder is the most frequent cause of death after lithotomy, and we have to consider whether it is more likely to occur when the prostate is partly divided and partly lacerated, or when it is simply dilated. The prostate when once cut into very readily tears, and the inflammation excited by the urine getting into these fissures produces more fatal results in lithotomy than all the other sources of danger put together. But if the prostate be not incised at all, this condition of things is entirely altered. In the old Marian operation the prostate was actually torn asunder by instruments, and there is no wonder that death so often resulted.]

Mr. Allarton's proposal is of a very different nature. He recommends that the finger should be introduced, in the first place, and dilatation effected by careful pressure—that long-bladed forceps should next be passed into the bladder, and, the stone having been seized, should be carefully and steadily withdrawn—the length of the blades causing the instrument, with the stone in its grasp, to act as a wedge, and thus assist in the process of dilatation. Even should the structure of the prostate tear under this gradual pressure, it is of little moment, so long as the mucous membrane remains entire, the urine being thus prevented from having access to the lacerated portions, which access, and not the mere fact of laceration of the prostate, constitutes, in my opinion, the grand danger in lithotomy.

Such is a rapid glance at the usual sources of danger after this operation, and it seems to me that the median operation is less liable to them than the lateral. Indeed, I think the question narrows itself to the following consideration—Is it better partly to cut and partly to tear the prostate gland, leaving the urine free access to the lacerated organ, or to dilate, without cutting, to such an extent as to admit the forceps, and then, by gradual traction, to dilate so much more as to permit the passage outwards of the stone?

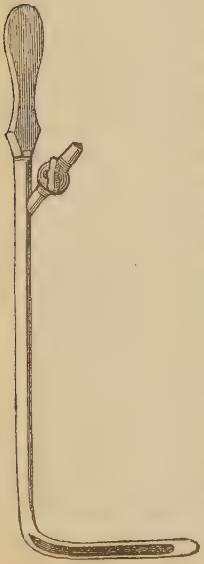
But, in addition to all this, the median operation presents the following positive advantages:—1. The incision is exactly defined. 2. No important parts, except the membranous portion of the urethra, are divided. The division of that part in its posterior surface, does away with one of the great difficulties of the lateral operation. and one which always prolongs the period of convalescence—the division of the muscles on one side of the neck of the bladder, and the consequent displacement of the parts. 3. The neck of the bladder being uninjured, the patient has from the first the power of controlling the stream of urine, which flows by the natural channel almost immediately after the operation—a result not usually obtained by the ordinary method until from one to two, or even three weeks have elapsed. On the whole, then, it seemed to me, that the operation described by Mr. Allarton, afforded a simpler and less dangerous way of removing moderately sized calculi than the usual lateral operation, and accordingly, when I met my friend, Mr. Henry Gibson, of this town, in consultation on a boy who laboured under this disease, I recommended, and he consented, to the performance of, the median operation. The subject of this case, T. B., æt. 7, had laboured under symptoms of stone from a very early period. When three years old, he was admitted into the Leeds Infirmary, and lithotomy was recommended, but, owing to some whim of his parents, was not performed. From that time his sufferings continued to be occasionally very great. He presented, when I saw him, a weak, delicate cachectic appearance, and his skin was covered with an impetiginous eruption—the result of deficient nutrition. He suffered from prolapsus ani, and was teased by a constant tendency to diarrhœa. The symptoms did not differ from those usually produced by stone, except that, from the long duration of the disease, he was more exhausted than patients usually are when brought under the notice of the surgeon. As no benefit could be expected from delay, we resolved to operate upon him at once; and although the stone was supposed to be larger than was quite favourable for the median operation, we thought that, in his feeble condition, the less the trial to which his system was subjected, the better. Accordingly, on the 22d Sept. 1856, the following operation was performed. Chloroform was administered at the express desire of his parents—he was tied up in the usual position, and a curved staff, grooved on the back, was passed into the bladder, and intrusted to an assistant, with directions to maintain it steadily in the middle line. The left forefinger was then passed into the anus, and the staff was felt distinctly, as it lay in the membranous and prostatic portions of the urethra, and in the bladder. A good strong knife, dagger-shaped at the point, and with a thick back, was then entered into the middle of the perineum, about half an inch in front of the anus. It was pushed straight in, with the back towards the rectum, until it entered the groove of the staff, and was directed by the finger in the anus to the membranous urethra immediately in front of the prostate. It was then pressed forward, still in the middle line, and an incision made in the centre of the perineum of about 1¼ inch in length—the point of the knife being pressed against the groove of the staff, so as to divide the membranous portion of the urethra on its posterior aspect. A long silver probe was directed along the groove, into the bladder, and the staff was withdrawn. The forefinger of the left hand, lubricated with oil, was passed into the bladder, and came in contact with the stone. The forceps were then introduced, but some little delay took place, owing to the stone being partially encysted. By means of a scoop, it was freed from its attachments, when it was forced out into the wound by the contraction of the bladder. A little delay again took place, from the position in which the stone lay in the wound, being in its long diameter. This was speedily rectified, and the stone extracted—the whole proceeding not occupying many minutes. The stone was 1½ inch long by 1 inch broad, and half an inch deep. Had it been somewhat less, I have no doubt that it would have been protruded by the action of the bladder, without the aid of forceps at all. The progress of the case was most satisfactory. The next day the urine began to flow by the natural channel, and at the end of the week none was perceived to come by the wound. It was hardly possible, after the first few days, to keep the patient in bed, or even in the house. His appetite improved rapidly, and on the 3d October, twelve days after the operation, I discontinued my attendance, the boy being then perfectly well, and the wound almost cicatrized.

It is right to add, that about a fortnight after, I was informed by Mr. Gibson that this boy was very ill, and even in a dangerous condition, in consequence of an attack of diarrhœa. I saw him on the the 20th October, and found him very much reduced. The wound, however, had healed, except a large flabby granulation about the size of a pea—and it was clear that his symptoms were quite unconnected with urinary disease. They yielded to the usual treatment, and I had the satisfaction of meeting the lad lately on the street, and hearing from him that he is perfectly recovered.

On this case I have only a few remarks to make. I have never, either in my own practice or in that of others, seen so complete and rapid a recovery after lithotomy. Although the operation is rarely fatal in children, I question whether this lad had sufficient stamina to have passed through the lateral operation in safety. I have only to add that, had the stone turned out to be so large as not to admit of extraction otherwise, I was prepared to divide the prostate with a "bistouri caché," and, with my finger in the wound, I could have guided the incision so that neither too much nor too little would have been cut. For stones of very large size, the lateral operation will probably always be preferred. It is too much, perhaps, to expect that surgeons, who have long and successfully practised it, will be inclined even to give a trial to any other proceeding; but having formed, after mature deliberation, the opinion that the majority of stones, not fit cases for lithotrity, can be removed more safely and more simply by the method described by Mr. Allarton, I have thought it my duty openly to express my views.—*Edin. Med. Journal, Jan.* 1857, *p.* 623.

86.—RECTANGULAR CATHETER-STAFF FOR LITHOTOMY.

By J. Hutchinson, Esq.



The main peculiarities of the instrument were its rectangular form and its catheter stem. The advantages *of its form* were, 1st, that it made the direction into the bladder straight, and thus obviated all danger of the knife leaving the groove; 2ndly, that the angle projecting prominently into the perinæum was more easily found than the curve of an ordinary instrument; 3rdly, that its groove commencing only at the angle, there was no chance of the urethra being opened too far forward, or the artery of the bulb being wounded; 4thly, that when once introduced it did not easily change position. Its being a *catheter as well as a staff* was important; 1st, because it allowed the surgeon to be quite certain of its being really in the bladder before commencing the operation; 2ndly, because it permitted of the bladder being injected without any change of instruments, and thus prevented the risk of the water escaping. It was provided with a stopcock. The author insisted strongly on the importance of operating with a full bladder and the dangers of its neglect, and believed that one great recommendation of his instrument was, that it would much encourage and facilitate the practice. Adverting to the causes of accidents in lithotomy, he stated, that of a series (nine) which had come under his notice during the last few years, chiefly in the practice of the London Hospitals, they had been due to, 1st, the knife leaving the groove in the staff; 2ndly, the staff being at the time not really in the bladder; 3rdly, injury of the fundus of the bladder with the point of the knife; and expressed a strong opinion that the employment of the "rectangular cathether-staff" would have prevented them all. The instrument shown to the Society had a side groove, and was adapted for the use of any form of knife the operator might prefer. It had been made by Messrs. Fergusson, of Giltspur-street. It had been tried in the deadhouse a great number of times, and once upon the living subject, and always without any inconvenience. There was no difficulty whatever in its introduction. It was advised to be held in the usual way, moderately hooked up under the symphysis pubis, but by a slight movement of the handle its angle might be made to project more or less into the perinæum, according to the operator's wish. Mr. Hutchinson wished distinctly to state that he made no claim to originality of design. Dr. Buchanan, of Glasgow, had long ago recommended and used an angular staff for lithotomy, and more recently Mr. Fergusson had devised a grooved catheter for perineal section. The present instrument was merely a combination of the two principles. He believed, however, that it possessed in its catheter stem a very important advantage over Dr. Buchanan's, since it enabled the operator to ascertain with positiveness whether he was in the bladder. With instruments of the ordinary curve this is done by striking the stone, but as an angular one is very inconvenient for sounding, it is liable, when made solid, to the objection that the surgeon might, occasionally have to operate in uncertainty. The author also laid before the Society several other modifications of the angular staff which he had had made in the course of a long series of experiments as to the safest instruments for lithotomy. One of these had the groove beneath, and the knife adapted to it was a double cutting gorget, the beak of which was so made that when once placed it could not leave the groove. This he had once used on the living without inconvenience; but as it was liable to some objection, and as the side groove allowed of the operation being completed by a single knife and much simplified the apparatus, he had at length abandoned the principle which distinguished the former.

Mr. Erichsen said that he thought Mr. Hutchinson's staff likely to prove of considerable value. He could give no opinion as to the merit of the rectangular shape, having had no experience of it, but he thought the combination of the catheter with the staff peculiarly valuable; it enabled the surgeon to inspect the bladder without changing instruments, prevented the escape of the injected fluid, that was apt to ensue between the withdrawal of the ordinary catheter and the introduction of the staff, and would tend to prevent some of the accidents that might befal a surgeon in lithotomy. Had he been provided with such an instrument an accident that had once occurred to him might have been avoided. A patient was sent to him, with stone in the bladder, which was at once detected on sounding. When about to be cut the staff was introduced, apparently into the bladder, but no stone could be felt. A hollow sound. with a short beak, was then passed, and the calculus at once struck. The staff was again introduced, and, as it passed without difficulty of any kind, and the point could be felt on depressing the handle above the pubes, it was supposed by Mr. Erichsen and those assisting him, that it was in the bladder; but that, having a large curve, the stone probably lay in this. Mr. Erichsen proceeded to cut the patient, and, on opening the groove of the staff found it was not in the bladder. Having satisfied himself of this, he withdrew the staff, and passed the hollow sound, with which he had previously felt the stone, cut upon this, and extracted a large calculus. The patient unfortunately died, and after death three old false passages were found leading from the urethra into the abdominal space, and by the side of the bladder. It was into one of these that the staff had passed, but the sound being larger, and having a short beak, escaped it, and entered the bladner. Now, had the staff been hollow, as in Mr. Hutchinson's instrument, such an event could at once have been recognised by the non-escape of urine. Since this case had occurred, Mr. Erichsen had heard of several instances in which a similar accident had happened. This led to the inference that the proper rule of practice should be, to feel the stone with the staff rather than with a sound when the patient was on the table. He did not know whether the use of the hollow staff in perinæal section originated with Mr. Fergusson or Mr. Thompson, but he had used the instrument with great advantage during the past twelve-months.—*Med. Times and Gazette, Feb.* 21, 1857, *p.* 200.

87.—*The Rectangular Staff for Lithotomy.* By Dr. ANDREW BUCHANAN, Glasgow.—[At the discussion which took place at a meeting of the Royal Medical and Chirurgical Society of London, on the use of the rectangular staff in lithotomy, Mr. Gamgee stated that in a case in which he saw Dr. Buchanan of Glasgow use it, the rectum was wounded. In reply to this Dr. Buchanan says,]

No such accident as wounding the rectum ever happened to any patient so operated on by me. Neither, although the operation has been performed in Glasgow, in and out of the Hospital, almost exclusively during the last ten years, did I ever hear of any such accident having occurred. One of the great advantages indeed of the operation is that the rectum is quite secure from being wounded. The curved form of staff in the ordinary operation, and the holding it up against the pubes, are the great causes of wounding the rectum.

I may also take this opportunity of saying that I have never experienced any difficulty from the angle of the staff slipping, although the mode of holding the staff is one of the most important points of the operation. But I may observe, and this Mr. Spencer Wells seems to have overlooked, that I retain my finger in the rectum during its performance.

Mr. Hutchinson observed that a rectangular instrument makes an inconvenient sound. Now so far is this from being the case that I prefer that form of sound to all others, and find it to be the best for detecting many stones, particularly those of minute size. As to Mr. Hutchinson's ingenious "catheter staff," I have no doubt that in many cases it may be found a valuable instrument.—*Med. Times and Gazette, Feb.* 28, 1857, *p.* 226.

88.—*Note on Lithotrity.*—[In a case of lithotrity on a rather old patient at St. Bartholomew's Hospital,]

Mr. Skey, after carefully injecting the bladder with warm water, was observed to break the stone once, and then order the man to bed. Mr. Skey then explained to his class that this is a rule he adopts at the advice of Sir B. Brodie, never at the first sitting to break the stone more than once, so that the bladder may thus become accustomed as well to the instruments as the altered state of the stone.—*Association Med. Journal, Oct.* 25, 1856, *p.* 902.

89.—ON THE ANATOMY AND PATHOLOGY OF THE ADULT PROSTATE.

By Henry Thompson, Esq., M.B., London.

[The author remarks that there is no part marked with sufficient distinctness to entitle it to the appellation of the third lobe. Morgagni after repeated examinations did not consider it a distinct part of the healthy organ.]

Existence of distinct tumours in the prostate. The existence of solid tumours of different kinds is by no means rare in the prostate. They were pointed out by Sir E. Home, and by him supposed to be of the nature of apoplectic clots. Subsequently, they have been regarded as fibrous tumours, and more lately it has been shown that some possess a structure approaching very nearly to that of the secreting tissue contained in the prostatic substance around. It was shown that enlargement of the prostate is very frequently associated with the development, more or less marked, of such growths in some one of three forms; in short, that the production of defined tumour is more frequently than otherwise the essential element of the pathological condition known as hypertrophy of the prostate. Of fourteen enlarged prostates in the series, six exhibited numerous fibrous tumours in the substance of the lateral lobes; the other show polypoid enlargements, single, binary, or mutiple, springing from the posterior median portion. The varieties may be briefly noticed as follows :—

1. A simple fibrous tumour, small, nearly isolated, made up of closely-packed organic muscular fibres, with some areolar tissue, intimately resembling those found imbedded in the walls of the uterus.

2. A tumour composed of the same elements as the preceding, but containing in addition, some of the glandular substance of the prostate, more or less imperfectly developed. This also may be imbedded, with or without a cyst, seeming sometimes to partake more of the character of a local enlargement, limited to a small portion or lobule of the prostate tissue, and only partially isolated. Although separating this class from the previous one for facility of reference, it was more than probable that the two nearly merge into each other at their adjacent limits, the latter approximating to the former by insensible gradations; so that some tumours which appear to be purely fibrous at first may be found to exhibit slight traces, in parts of its structure, of the glandular element. In *all*, however, the basis is *muscular fibre.*

3. A tumour composed entirely of the ordinary structures of the prostate fully developed, and enjoying activity of function in common with the rest of the organ. It assumes a pyriform shape even in its earliest stage, and springs from the posterior median portion. It may vary in size from that of a pea to that of a middle-sized pear. The analogies between these and the tumours of the uterus are considerable. Pointed out by Velpeau and others, modern researches seem to indicate them more plainly.

a. There is a ground of analogy derived from the two organs, prostate and uterus, being undoubtedly morphological equivalents in the two sexes, the analogue of the uterus and vagina combined being found in the prostatic vesicle or utricle of man. Numerous authorities are referred to in support of this view.

b. A stronger ground may be found in the fact that the prostate and uterus are organs whose bulk is constituted by the same tissue—viz., the organic muscular fibre. No other organ in the body besides these two is similarly constructed by thick masses of this tissue ; elsewhere, it is distributed in very thin layers.

c. Both organs exhibit growths identical both in external and histological characters. Isolated tumours imbedded in the substance of the organ, and polypoid outgrowths intimately connected with its structure, are seen in both. The occurrence, in some prostatic tumours, of a very small proportion of partially developed gland tissue, intermingled with the muscular basis, should be regarded rather as an accident of situation than as indicating any material difference between those and the purely muscular tumours.

d. The two organs are subject to considerable hypertrophic enlargement, mainly consisting of their constituent fibrous and muscular elements, and in both this may be associated with some tumour-formation, or may exist independently of it ; may, in the latter case, be local or general, affecting the whole or certain parts of the organ, and, when local, affecting particular spots more commonly than others.

c. The two organs are liable to these changes after the prime of life has passed. Bayle, quoted by Rokitansky, and confirmed by Dr. Robert Lee, says that 20 per cent. of women, after thirty-five years have fibrous tumour of some size in the uterus. These preparations show prostatic tumours in 30 per cent. of males after fifty.—*Brit. Med. Journal, March* 21, 1857, *p.* 240.

90.—CANNOT ENLARGEMENT OF THE MIDDLE LOBE OF THE PROSTATE GLAND BE REMOVED BY THE LATERAL OPERATION OF LITHOTOMY?

By Dr. George D. Gibb and Henry Thompson, Esq.

Some months ago, I had under my care a case of enlargement of the middle lobe of the prostate gland, which had commenced to produce all the inconveniences and miseries arising from the obstruction to the flow of urine, from the flapping forwards of the tumour and closing the internal orifice of the urethra, like a valve, on passing urine. Now it struck me at that time, as well as on many other occasions, that in cases of this peculiar affection, where the poor patient oftentimes suffers greater misery than from the presence of a stone in the bladder, relief might be obtained permanently and effectually, by going through the steps of the lateral operation for stone, and cutting away this middle lobe. I seriously contemplated the propriety of its performance on one of my own patients, and think it as well to throw out the hint to those hospital surgeons who are in the way of giving it a trial.

Should the result prove effectual—and I see no reason why a patient should not have as good a chance of recovery as in many cases of stone —then it will be one of the greatest triumphs of the surgical art in modern times. What surgeon will be the first to try it ! I am induced to send this short note, from witnessing the operation for stone, at King's College Hospital, this day week by Mr. Fergusson, in which that distinguished surgeon excised the middle lobe of the prostate, besides removing two calculi.

[This suggestion of Dr. Gibb in the 'Lancet' has given rise to the following paper on the same subject by Mr. Henry Thompson :]

Dr. Gibb raises an interesting question, viz., the propriety of performing excision of an "enlargement of the middle lobe of the prostate," by means of an operation similar to that of lateral lithotomy. It may be interesting to inquire what experience is already available for our guidance in reference to this subject. It should first, however, be premised, that defined outgrowths from the prostate, pedunculated masses *capable of being excised*, are by no means common. There are numerous preparations of such in our museums, but these are the exceptional cases in practice. Obstruction from enlarged prostate does not commonly consist of a tumour which, like a valve, occludes the internal orifice of the bladder. Further, it is not very difficult sometimes to distinguish this form with the exploring sound during life, but the diagnosis is by no means always easy.

Mr. Guthrie, who recognised the "infrequent occurrence" of this form,* thought that enlarged prostate, although not generally removable by *ex*cision, might be amenable to *in*cision. He says—"A question has arisen in my mind whether any operation could be done on the prostate from the perinæum; and I was led to entertain it from finding that in a patient on whom I had operated for stone, whose prostate gland was much enlarged, I had rendered him a further service in the diminution of his prostate;...... in fact, I was satisfied I had cured, or nearly so, the disease of the left lobe of the prostate, which I found to be much enlarged during the operation." Subsequent inquiry respecting this matter led Mr. Guthrie to obtain from Sir W. Blizard an unpublished MS., previously read at the Medico-Chirurgical Society in 1806, in which he advised, as a remedy for hypertrophy, the division of "the prostate by a double gorget cutting on both sides, introduced in the usual way, on a staff, into the bladder." Sir William adds, "This is not a speculative remark. I have several times performed such an operation in cases of disease of the prostate gland, which I have thought within its scope of relief, with complete success."† Mr. Guthrie not only proposed, but subsequently performed in two cases, the division of an organic obstruction or barrier at the neck of the bladder, with a lancet-like blade, which he passed along the urethra in a canula for that purpose.‡

Dr. Gross of Louisville, also, has proposed "excision of the middle lobe" by "a pair of stout probe-pointed scissors," after "incisions in the perinæum, as in the lateral operation of lithotomy;"§ but it does not appear that he has performed it.

M. Leroy D'Etiolles states that he has ligatured these tumours with much success, and figures an ingeniously-contrived apparatus for the purpose, to be passed and worked through the urethra; adding instructions for its mode of application.‖ I confess that the difficulties of this proceeding appear to me enormous, even supposing that the removal of the mass to the cavity of the bladder in this manner could be considered desirable. He also performed incision and excision of portions of the enlarged prostate, more than twenty years ago.

M. Mercier, the most recent writer on the subject, incises the thickened mamelon which enlarged prostate usually forms at the neck of the bladder, or excises a portion from it, passing his instruments along the urethra. This is an easy operation, and resembles much that performed by Mr. Guthrie. Mercier details 15 cases in illustration, most of which were operated upon in the presence of some of the leading surgeons in Paris, five of the patients having been examined by the commission of the Argenteuil prize.* The results of these proceedings, perhaps I may be allowed to add, are considered at length in my forthcoming work on the prostate. For the present suffice it to say, there appears to be evidence that some beneficial result may be in certain cases so attained, although a better and safer method of dealing with the affection will, I believe, yet be found. It is a significant fact, however, that Mr. Guthrie, with whom the proposal originated, did not recommend it in later editions of his works.

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* On the Anatomy and Diseases of the Urinary and Sexual Organs. By Guthrie. p. 227. London, 1834.

† Op. cit., p. 253. ‡ Ditto, p. 275.

§ Diseases of the Urinary Organs, 2nd ed., p. 712.

‖ Thérapeutique des Rétrécissements, des Engorgements de la Prostate, &c. Paris, 1849 pp. 75-77.

Evulsion of the tumour by means of a lithotrite has been performed —that is to say, a portion, supposed to be the protruding one, is seized between its blades, and crushed or torn away, if possible, so as to ensure a state of sphacelus. M. Leroy records a case in which he did this with Jacobson's lithotrite (in his treatise on "Lithotripsy," p. 214). The description of such an operation is not calculated to prepossess one in its behalf. Surely it would be better, in a favourable case, provided the diagnosis of valvular tumour was clear, to make an incision in the median line of the perinæum—a nearer and safer route to the neck of the bladder than the lateral operation offers—to fix the tumour with a vulsellum, and divide its base of attachment with a probe-pointed bistoury, or with the écraseur, if preferred. But if it be a fact —and our museums declare it—that these outgrowths almost never exist without considerable hypertrophy of the lateral lobes, sufficient alone to offer a considerable obstacle to the outflow of the urine, no very large balance of prospective benefit can be reckoned on against the hazard of such an operation.—*Lancet, April* 18 *and* 25, 1857, *pp.* 401, 438.

91.—ON A NEW METHOD OF OPERATING FOR IMPERMEABLE URETHRA.

By Professor Syme, Edinburgh. (Read before the Royal Medical and Chirurgical Society.)

In a former communication upon the remedy of stricture by external incision, the author endeavoured to show that impermeability was not consistent with the nature of stricture, and that whenever the urine could pass through the urethra an instrument might be made to do so; not perhaps at once and with ease, but always through time and proper management. Though thus certainly permeable while merely contracted, the canal was undoubtedly liable to complete obstruction in consequence of wounds, and also of sloughing, when it had been found to constitute a very troublesome subject of treatment by the operation hitherto employed—viz., cutting upon the point of a catheter passed down to the seat of obstruction, so as to clear a way for its introduction into the bladder—a process rendered difficult by the thickness and condensation of the textures concerned, and also dangerous as well as uncertain by the risk of not cutting exactly in the proper course of the urethra. Two cases of this kind—one from a provincial town in Scotland, and another from St. John's, New Brunswick, in both of which not a drop of urine passed through the urethra for many months, the urethra being completely obstructed to the introduction of instruments—having lately come under the author's care at the same time, led him to reconsider the subject, and devise the following plan instead of the one usually employed, which for the reasons just mentioned he was unwilling to adopt. An instrument like the common lithotomy staff, with a groove on its concave instead of the convex side, being introduced through the fistulous opening of the perinæum, and confided to an assistant, the guide director employed for the division of strictures by external incision might be passed down to the seat of obstruction, and while the staff was supported by pressure upon the perinæum to thrust through the opposing substance in the course which it ought to take if the canal were free, enter the groove, and so pass into the bladder, when the state of matters would be similar to that of a stricture requiring division after having the director passed through it, so that the operation might be completed in the same way as upon such an occasion. This procedure was executed in both of the cases, without any difficulty in one, and without more in the other than might have been expected from the extreme degree of injury which the patient had sustained by falling twenty feet, fracturing the pubis, having the bladder punctured, &c. &c. The first patient was dismissed from the hospital perfectly well at the end of seven weeks after the operation; the second, passing urine in a full stream, but in general only by drops through the perinæum, appears also to have the prospect of complete recovery at no distant date. While quite aware that the formation of a new urethra is much less promising in its result than the enlargement of an old one, the author expressed his hope that the method which he had proposed would facilitate the procedure, and lessen the risk of its bad consequences.

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* Researches sur le Traitement des Maladies des Organes Urinaires, &c. Sixième Memoire. Paris, 1856.

Mr. Coulson thought there were many cases in which the plan proposed by Mr. Syme would not be applicable. There might be a great deal of the urethra obliterated anterior to the perineal opening, in which case the mode of propelling the small director would not apply; or the operator might not be always able to get the staff from the perineal opening behind the urethra into the bladder on account of the tortuous course it would have to take. He had seen many such cases, in which he considered these difficulties would be almost insuperable.

Mr. Hutchinson remarked that there would be no difficulty in passing the instrument in those cases in which there was a fistula in the perinæum; it was in cases in which there was no such opening, that the surgeon experienced the difficulty. He said that there was one objection to the use of the slender instrument employed by Mr. Syme, and that was its liability to bend when force was used. He had seen such cases.

Mr. Syme, in reply to Mr. Coulson's objection, that it would be rendered difficult by the tortuous direction of the fistula, stated that the passage was always perfectly direct, and also wide, unless perhaps just at the orifice, since the cause of true obliteration, for which alone the operation was intended, resulted from either sloughing or wounds, and not from the gradual extension of purulent matter, as in the ordinary cases of perinæal fistula, which always admitted of remedy, either by dilating or dividing the stricture that gives rise to them. As to the opinion expressed by Mr. Hutchinson, that the operation in question would not be applicable to strictures so tight and tough as to bend metallic instruments employed for their dilatation, Mr. Syme again explained that the procedure which he had proposed was intended for the remedy, not of *stricture*. but of *obliteration*, and that he believed the former condition would never be found to require the old expedient of cutting upon the point of a catheter, if the introduction of bougies were perseveringly attempted with skill and care, and especially with such gentleness as must entirely preclude the risk of bending a metallic instrument.—*Lancet*, *March* 14, 1857, *p.* 264.

92.—STRICTURE OF THE URETHRA; TREATMENT BY PERINEAL SECTION.

By John Marshall, Esq.. University College Hospital.

[A man thirty years of age had laboured under symptoms of stricture of the urethra for eight years; he had occasionally suffered from retention, but latterly the urine generally dribbled away, very seldom passing in a continuous jet.]

When admitted into the hospital a short time before Christmas, it was observed that the dimensions of the penis were unusually large, the erectile tissues being distended, but at the same time very lax. There was induration along the urethra, extending about an inch and a half behind the scrotum. There was narrowing at that point, but the most constricted part was six and a half inches down the canal, probably corresponding with about five inches, or five and a half, in an ordinary sized penis. Through this, even a No. 1 catheter could not be passed. In spite of rest, a non-stimulant diet, and the administration of alkalies, the most patient trials, extending over a few weeks, failed in enabling anything larger than a fine catgut bougie, about one-third the diameter of a No. 1 catheter, to be passed into the bladder. On one occasion, the instrument being retained a few hours, a temporary increase in the size of the stream of urine was the result, but the stricture speedily returned to its previous condition.

No impression being likely to be made upon the disease by dilatation, the urine being healthy and the habits of the patient temperate, an operation was determined on; and accordingly, on the 6th January, Mr. Marshall proceeded as follows: The finest Syme's staff was passed into the stricture as far as possible, and the urethra divided upon it for about an inch or more in extent; an attempt was then made, by a further careful incision, to open the urethra behind the stricture; but neither could the staff be passed on into the bladder, nor could a director be introduced into it from the wound in the perinæum. A No. 6 catheter now easily reached the wound, but its point could not be guided on into the bladder; a No. 1 catheter, however, introduced through the penis, easily slid into that organ. Upon this instrument the posterior part of the urethra was divided a little further back, and and the catheter could then be moved pretty freely backwards and forwards; and, under all the circumstances, it was deemed more prudent to leave it in the bladder, and attend carefully to its being kept permeable to urine, than to incur the risk of difficulty of passing a larger instrument, after withdrawing the smaller one. Such was the length of the penis, the depth of the perinæum, and the high position of the bladder, that the rings at the top of the catheter rested against the orifice of the urethra.

At the operation there was moderately free hemorrhage from the very loose and relaxed erectile tissues, and a recurrence of this took place in the evening. The patient suffered much from the effects of chloroform. The catheter, which acted well, was withdrawn after forty hours. On the third day, the patient had three attacks of rigor, but was relieved by the warm bath. Subsequently, though weakened by the operation, he had no other bad symptoms.

On the sixth day, Nos. 3, 4, and 6 silver catheters were passed in succession into the bladder; but on the next occasion, one week afterwards, only No. 2 would reach that organ, unless indeed force sufficient to cause dilatation of the parts had been used. The urine from the first had flowed with great celerity through the wound, showing that the part of the urethra behind the perineal incision had been sufficiently freely divided. At the end of a month, the urine still flowed quickly by the wound, though this was nearly closed. The stream through the penis was small. It was evident that the canal in front of the wound was again contracting, and it was resolved to divide this part in a second operation, rather than dilate it. At this period, however, it was only by patient manœuvring at first with the handle of the instrument turned downwards and then upwards, that No. 2 catheter could be passed into the bladder. The urethra was unusually long, the canal was irregular and much deflected at the stricture; there were undoubtedly several false passages, and beyond the seat of the former incision it was very difficult to hit the urethral canal.

Owing to these circumstances, it was found impossible, with a Syme's staff, when the shoulder of the thick part or stem was arrested at the stricture, to feel at all certain as to the point being engaged in the right passage further on.

To meet this difficulty in the case, Mr. Marshall conceived the idea of employing a modified Syme's staff, having the thick part moveable on the finer grooved portion; and it was at once seen that the latter might also be made to serve as a guide to the subsequent introduction of the catheter intended to be temporarily retained in the bladder. The instrument represented and described below was accordingly constructed.

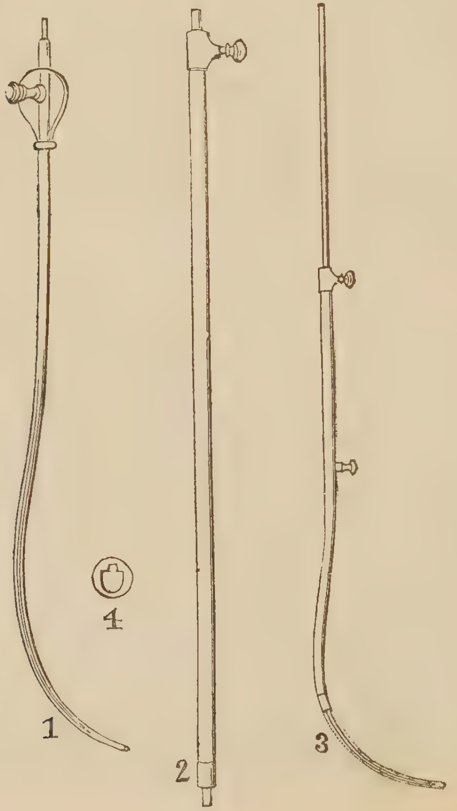

Figure 1 represents a narrow grooved steel staff, having the diameter of a No. 2 catheter, but the curve of a medium-sized Liston's lithotomy staff. The groove extends high up on the stem, but does not reach within an inch of the point of the instrument, and thus does not interfere with the perfectly cylindrical form of its termination. Above the groove the corresponding surface of the staff is flat, so that the section of the instrument, except near the point, is plano-convex. At its upper end projects a short male screw, and it is provided with a broad handle, which can be fixed or removed at pleasure. Figure 2 consists of two parts. One of these is a straight vertical piece of steel, of the same diameter and sectional form as the grooved staff, figure 1, and is tapped with a female screw at its lower end. The other part is a No. 8 gum-elastic catheter, marked in inches, and fixed for the time upon the central part by a lateral binding screw at its upper end. Its lower end is provided with a silver mount, the perforation through which, shown of the full size in figure 4, is accurately adapted to the plano-convex surfaces of the central part, so that it cannot turn or twist. Opposite the plane edge of the mount is a notch or short groove extending a short distance upwards from its point.

In using this instrument, the staff, figure 1, is first introduced and ascertained by the freedom of its point to be really in the bladder, from which indeed it is not to be withdrawn until the final stage of the operation. Thus placed, its handle is removed, and the central part of figure 2, carrying the outer gum-elastic portion, is screwed into its projecting end, so that the two steel parts become continuous, and have their plane surfaces turned in the same direction. The binding screw near the top of the gum-elastic catheter being loosened, this latter is made to travel down upon the staff, along the urethra, till it meets the stricture, at whatever point this may be seated. Owing to the accurate fitting of the lower silver mount to the half-flat, and half-round surface of the staff, the little notch upon it comes to correspond with the groove in the latter; and by now tightening the binding screw at the upper end, a compound staff is formed, resembling in principle Mr. Syme's, but having its point necessarily within the bladder, and, owing to its strong curve, projecting well in the perinæum. Figure 3 shows the instrument as put together.

The division of the stricture being accomplished in the usual manner, the gum-elastic catheter is passed on towards the bladder, sliding upon the curved staff as indicated by the dotted lines in figure 3, and any remaining stricture is thus readily detected and divided by the further use of the knife. Then the elastic part is completely withdrawn over the now continuous central staff, and upon this, which is still retained in the bladder, the catheter intended to be retained for a time in that organ is without difficulty or delay readily introduced. This catheter, of gum-elastic material, has a lateral as well as a terminal aperture, to allow of the free passage of urine; it is also provided with a soft metal stylet, which gives it the necessary amount of stability, and at the same time acts as a plug.

On the 12th of February, the patient, C. E——, being in a favourable condition, was operated on by Mr. Marshall, who used the instrument above described for the first time. With careful manœuvring, the narrow grooved staff was introduced into the bladder. and the subsequent steps of the proceeding were carried out. Repeated touches of the knife were necessary to divide the exceedingly tough substance of the strictured canal in the direction of the scrotum. As at the first operation, and indeed after the passing of catheters long previously, there was rather free hemorrhage. This being thoroughly divided, the elastic portion slid on into the bladder, and being then withdrawn, its place was with perfect facility supplied by the permanent catheter. Owing to the adhesiveness of the new gum-elastic, some force was needed in order to remove the central steel staff. Finally, the metal stylet was introduced, and the catheter tied in, in the ordinary way.

The patient, who had not taken chloroform, had no rigors, and was altogether better than after the first operation. The catheter was retained *in situ* only about twenty-eight hours. On the fourth day, Nos. 7 and 8 silver catheters were passed very easily. On the seventh day, Nos. 8 and 9, and on subsequent occasions No. 9 only. At the present date, the sixteenth day after the operation, the perineal wound is reduced to a mere pinhole. The urine passes entirely through the penis, and the final result of the case is no longer doubtful.

In some remarks after the operation, Mr. Marshall explained the objects of the instrument, and observed, that although he had hitherto exclusively used Mr. Syme's staff in performing perineal section, he submitted that the modification of it with a moveable shoulder, as then exhibited, might be useful in some cases, and serving also as a certain guide to the subsequent introduction of the catheter, might save much vexatious delay in others.—*Lancet, March* 7, 1857, *p.* 241.

93.—*On the Beneficial Effects upon Intractable Strictures of Opening the Urethra behind them.*—The benefits of the plan of treating bad strictures by procuring a free escape for urine behind the strictured tract has been well illustrated by a case now under the care of Mr. Cock, in Guy's Hospital. The end referred to may be secured either by puncture of the bladder, or by opening the membranous urethra, preference for one or the other mode being often optional with the surgeon. Of course when no retention has occurred, and the bladder is kept empty, puncture of it cannot be resorted to; and in this class of cases, as well as those in which the perineum is the seat either of abscesses or sinuses, the perineal operation is to be preferred. The clinical fact on which the practice is founded is, that strictures, when once relieved of the irritation of the urine passing over them, spontaneously soften down and dilate. The plan, although much ridiculed by some, is a great favourite with several of our most practical hospital surgeons, among whom we may mention Mr. Cock, Mr. Wormald, and Mr. Simon. Mr. Wormald terms it giving "the diseased urethra a holiday," and is very warm in his commendations. Mr. Cock and Mr. Simon we have often seen resort to it. In cases of impassable stricture, its advocates regard it as far safer practice than the attempt to cut through the stricture without a guide, a procedure acknowledged to be one of much difficulty and uncertainty. Mr. Cock's case referred to may be briefly outlined as follows:—A man in fair health, aged 30, had been for five years the subject of a long and most intractable stricture. His penis, &c., at the time of admission, was seamed with scars of incisions made for the relief of extravasation, and he stated that he had repeatedly suffered attacks of retention. The urine merely dribbled away, and there were numerous fistulæ in the perineum. After some weeks' patient treatment Mr. Cock still found himself unable to pass the smallest instrument. The mass of induration around the urethra was very large. The man was now put under chloroform, and with a straight-bladed knife Mr. Cock opened the urethra by a single plunge, just anterior to the prostate. No staff was in the urethra at the time, and no attempt whatever was made to divide the stricture. A female catheter was passed by the wound into the bladder and retained a few days. No urine whatever flowed by the penis for upwards of a fortnight, and at the end of this time a No. 5 catheter was pretty readily introduced through the stricture. No case could better prove the principle that strictures, when relieved from irritation, do really soften and spontaneously dilate. There is, indeed, whatever some may have held, nothing surprising in the circumstance that they should do so. In cases of Amussat's operation, performed for stricture of the rectum, the latter has been known to dilate afterwards very considerably, and the effect of tracheotomy, in relieving chronic laryngeal disease, is well known to all surgeons.—*Med. Times and Gazette, Dec.* 20, 1856, *p.* 621.

94.—ON THE TUBULAR TREATMENT OF STRICTURES OF THE URETHRA AND OTHER MUCOUS CANALS.

By THOMAS WAKLEY, Esq., Surgeon to the Royal Free Hospital.

[The author observes that it is now above five years since this subject was first broached by him, and since that time the instruments which he brought before the profession have been spoken of in terms of high commendation by Guthrie, Keate, Fergusson, Crampton, Liddell, Solly, Coulson, Lizars, and other eminent surgeons. They have been used in hundreds of cases under the author's own observations, with almost invariable benefit.]

The instruments are composed of three guides of different sizes, eleven dilating silver tubes, and the same number of flexible tubes. The guides are numbered 1, 3, and 5.

A guide consists of a hollow silver director, thirteen inches in length, straight, excepting near the end, which is slightly curved, the extremity being closed and rounded, and having an aperture at one side. A moveable handle is fitted to it, for assisting its introduction into the bladder; when this has been effected the handle is removed, and a steel rod of the same size, five inches in length, is fixed into the external extremity of the director by one turn of a screw. This now forms the urethral director, over which the tubes are made to pass.

The silver tubes are nine inches in length, and straight; the opening at the vesical extremity being bevelled off and exactly adjusted to the surface of the guides. The upper end terminates in two flanges, for being worked with the fingers and thumb.

The flexible tubes are manufactured of gum-elastic, lined with flexible metal, and are ten and a half inches long, conical towards their points. Like the silver tubes, they glide over the guide with the greatest precision. Their upper end is furnished with a silver collar and rings, to enable their being secured in the urethra. Both the flexible and the silver tubes are numbered, and work upon their corresponding guides.

It is my object, however, on this occasion, to refer not only to what has already been accomplished in treating strictures of the urethra on the tubular plan, but also to urge that the same principles of mechanism may be beneficially applied to the treatment of strictures of other mucous canals, as the rectum and œsophagus, for the dilatation of the neck of the uterus, and also for the introduction of a large-sized O'Beirne's tube. The various mucous canals of the body are very similar in their structure, and are liable to similar diseases, especially contractions, resulting, in many instances, from like causes. Indeed, the term "Diseases of the Mucous Canals of the Body" appears very naturally to include a set of maladies analogous in kind. The instruments usually employed in the treatment of stricture of the urethra resemble in principle and form the bougies used for stricture of the rectum, and also those for stricture of the œsophagus. The object to be attained in all cases is the same—viz., the dilatation of the canal to its normal calibre. In addition to the new instruments for dilating the urethra, others formed on the same principle for dilation of the rectum, the œsophagus, and the uterine neck are now upon the table, and their mode of action will be shown to you by their manufacturer, who is present.

It forms no part of my intention at this time to enter into any discussion on the relative merits of different and rival plans of treatment, and I disavow any desire of detracting from the scientific efforts of other surgeons who employ other systems, and who adopt the methods advocated by once eminent surgical practitioners, who have passed from the scene of our labours.

Probably it may be stated with confidence, that in forty-nine cases of stricture of the urethra out of fifty, in which any instrument can be passed into the urethra, the application of cutting instruments, or of caustics, or any other means interfering with the normal structures of the urinary canal, might be entirely avoided by the tubular system of treatment.

That the mode now recommended is consistent with the anatomy and pathology of the structures involved cannot be questioned; and the advantage of effecting a cure without causing any breaches of healthy textures is equally free from dispute. The infliction of wounds even trivial in extent, in persons having depraved or debilitated constitutions, is often attended with great danger, and is not unfrequently followed by the worst results.

The mechanical power which the guide and tubes place at the disposal of the surgeon is unquestionable. It is absurd, however, to pretend that any resemblance exists between that power and the forcible catheterism of M. Boyer, as has been stated. The difference of action in the two cases being taken into account, a striking *contrast*, instead of the smallest resemblance, will be rendered obvious. In the French system, the catheter is forcibly directed towards the bladder, without any guiding implement whatever, the surgeon relying simply on his knowledge of anatomy. The tubular dilators, on the contrary, are passed over a guide, and cannot by any possible means diverge from the natural course of the canal—an advantage peculiar to this system of treatment; and it would be difficult to overrate its importance as a source of safety to the patient. With the guide and tubes, it has been found that the rapid and permanent dilatation of a stricture can be accomplished in the most prompt and effectual manner, and, at the same time, the proceeding may be so cautiously regulated as to afford the patient the utmost possible protection against the application of all unnecessary force.

After the *last* silver tube has been passed at any sitting, an elastic one may be introduced, and left in the canal, the guide being withdrawn through it. The utility of leaving a flexible instrument in the canal has been described by Sir Benjamin Brodie, in his Lecture on Surgery, in the following terms:—

"This method is particularly applicable—

"1st, Where time is of much value, and it is of great consequence to the patient to obtain a cure as soon as possible.

"2nd, Where a stricture is gristly and cartilaginous, and therefore not readily dilated by ordinary means.

"3rd, Where, from the long continuance of the disease, the urethra has become irregular in shape. or where a false passage has been made by previous mismanagement.

"Now if, instead of a bougie, you use a gum-catheter, and allow it to remain, the urine flowing through the catheter, the contact of it with the urethra is prevented, and the rigor is prevented also."

The flexible tube therefore will not only furnish the ready means for re-introducing the guide without the danger, or even the possibility, of making or entering a false passage, but it appears by its action to maintain the dilatation which the tubes produce, and to promote the rapid absorption of the submucous deposits, which, in many cases, caused the obstruction of the canal. In a word, the permanent cure of strictures of the urethra by the plan of the tubular treatment depends mainly on the thorough absorption of the extraneous substance usually interfering with the normal condition of the urinary canal.

When once a guide has been introduced into the bladder, the power of the operator over the stricture is all but unlimited. The late Mr. Guthrie, to whom this Society is indebted for many highly valuable communications, has stated, in his work on 'Diseases of the Urinary Organs,' that it is impossible to speak too highly of the invention of treating diseases of the urethra by means of the urethral guide and tubes. The same distinguished surgeon also remarked that "it is capable of rendering great service when the withdrawal of a sound or catheter cannot always be certainly followed by the re-introduction of another, and which withdrawal it renders unnecessary until a larger one is introduced over it—a very great improvement, which no surgeon should neglect; for when this can be done, no other operation is immediately necessary."

Mr. Solly, surgeon to St. Thomas's Hospital, at a meeting of the Royal Medical and Chirurgical Society in April, 1853, whilst objecting to the use of the knife in the treatment of stricture, said that "he had found the plan of the urethral guide and tubes very useful in expediting the cure."

Mr. Coulson, in a lecture on the treatment of stricture of the urethra, delivered at St. Mary's Hospital in December, 1853, spoke of the instruments before you in strong terms of approval."

Mr. Lizars, in the preface to the third edition of his work on 'Stricture of the Urethra,' states of the tubular instruments that "those who have witnessed their operation speak favourably of their beneficial effects. They appear to me," he says, "to be formed upon a very ingenious principle, and I have no doubt, if cautiously inserted, that they may prove a useful curative auxiliary." (p. xxiv.)

Quotations of a similar character might be multiplied, but probably enough have been cited to prove that the method of treating the strictured urethra, by means of the instruments now recommended, is worthy of their earnest consideration. I may also observe that the late Mr. Guthrie, who several times witnessed their action at the hospital with which I am connected, frequently remarked to me, that the objection to their use arose from the great power which they placed at the disposal of the surgeon, and that "a surgeon could really do too much with them at one operation." When, however, it is considered to whose hands the employment of these instruments is to be confided, it cannot be believed that patients will suffer from an undue exercise of power, or that a want of caution will be shown by the operator.

The removal of the stricture may be effected either rapidly or slowly, according to the intention of the operator. Sir Benjamin Brodie has most truthfully observed that "the temper of the urethra varies as much as the temper of the mind." The surgeon must therefore exercise his discretion as to the rapidity with which the strictured part should be dilated. If the intention be to proceed slowly, the treatment may be conducted, after the first two or three operations, by means of a silver tube, which may be allowed to remain in for an hour or so. Flexible tubes, except at two or three of the earliest sittings, need not be employed in such cases as these. But if a rapid cure be decided upon, all the means at the disposal of the operator must be employed with promptitude, caution, and watchfulness, in order to effect a safe and speedy termination of the treatment. It may be observed that strictures of many years' standing have been removed with remarkable promptitude by the tubular system of treatment.

Before using the instruments, two or three days should be occupied in preparing the patient for operation. Opportunity should be also taken of examining the urine, and obtaining a clear history of the malady. By examining the urine, of course an elaborate qualitative analysis is not meant; but the specific gravity of the urine should be ascertained, its reaction determined, and it should be examined for vesical mucus or pus, and the products of calculi. It is necessary to be the more particular with respect to these preliminary measures in proportion to the severity or complications of the case. Cushions, made of Hooper's prepared india-rubber, containing hot water, should be applied to the region of the bladder above the pubis, and also against the perinæum. The urethra should be carefully examined with a guide suited to its calibre; and the necessity cannot be too strongly urged of carrying the point of the instrument along its anterior surface. With patience and perseverance, aided by the usual dexterity which a surgeon should possess, the instrument will be passed through the stricture. This step having been accomplished, the moveable handle of the guide is to be withdrawn, the index-rod screwed on, and a corresponding silver tube passed upon the guide through the stricture. It will be observed that the guides are straighter than the catheters used by the late Mr. Liston, and they are made so as to allow the urethra to be straightened as much as possible, which is effected by making a fulcrum of the triangular ligament, the penis being brought rather lower than at a right angle to the body. By this mode of proceeding, the tubes are easily passed to the neck of the bladder. Having sufficiently expanded the stricture, the last used silver tube is withdrawn, and a flexible one is then passed over the guide, which should be immediately drawn through it.

This is commonly a very easy proceeding, and requires no further manipulation than a rotatory motion of the instrument, given to it by means of its flanges. The tubes, which are lined with flexible metal covered with elastic fabric, glide easily. The urine is then disaction to maintain the dilatation which the tubes produce, and to promote the rapid absorption of the submucous deposits, which, in many cases, caused the obstruction of the canal. In a word, the permanent cure of strictures of the urethra by the plan of the tubular treatment depends mainly on the thorough absorption of the extraneous substance usually interfering with the normal condition of the urinary canal.

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This is commonly a very easy proceeding, and requires no further manipulation than a rotatory motion of the instrument, given to it by means of its flanges. The tubes, which are lined with flexible metal covered with elastic fabric, glide easily. The urine is then discharged, and the tube, at the discretion of the operator, is gently withdrawn to such an extent as to allow only a small portion of the point to project beyond the neck into the bladder. By retaining it in that position its point is prevented from irritating the mucous membrane of the bladder, and thus those rigors are prevented which are so distressing to the patient and alarming to the operator.

Many cases are on record where the point of the instrument, tied down against the walls of the bladder, has caused their ulceration and perforation. I remember being present at the post-mortem examination of a gentleman who was said to have died from stricture, but the inspection disclosed an ulcerated perforation of the bladder, just at the place where the point of a small silver catheter had rested. In that case the catheter had been tied in for three days. The gentleman was reported to have had a stricture for thirty years, and a hard, gristly tumour was found, nearly encircling the urethra, which could be easily felt externally. Upon *slitting* open the urethra, the stricture was discovered to occupy its membranous and bulbous portions, where the instrument had been grasped by the contracted part. The mucous membrane there was more congested than elsewhere, and covered over by a thick muco-purulent matter. (The instrument that had been used was quite blackened from this part to its point.) The contracted portion had evidently been greatly widened by the long pressure of the catheter. Upon cutting out a portion of this gristly part of the urethra, the mucous lining was found to be thin, and strongly adherent to the subjacent structure, from which it could not be torn without bringing away some of the indurated tissue. When scraping it, a very minute quantity of the same kind of viscid matter came away upon the knife. Upon dissecting back the indurated part, it was found to merge into the structure around which it had formed; no defined border to it could be ascertained. The hardened structure was of a reddish-white colour and fibrous, and was deposited by the inflammation which had at some time or other been set up. A false passage existed, which left the urethra half an inch in front of the thickening, and passed between the urethra and the subjacent structures, entering the surrounding callosity.

This case appears to assist greatly in the solution of that most difficult problem,—How is it that the pressure of an instrument on the urethra relieves or opens a stricture? The rationale in the case of this man seems to be, that upon the introduction of the catheter the mucous lining of the urethra became inflamed, and secreted a muco-purulent matter; and that the pressure produced softening and absorption of the hard callus external to the mucous membrane. Although the pressure was exerted upon the hardening through the elastic mucous lining, the latter was neither absorbed nor ulcerated by this pressure, but only irritated and excited to the extent of secreting and discharging the muco-purulent matter. A similar action is manifested in the absorption of a tumour from pressure made upon it over and through the skin. My belief is, that in rapid dilatation the constant or frequent presence of an instrument induces absorption of the adventitious submucous formation producing the stricture, but that in slow dilatation the action is only a mechanical distension of the contracted canal, the interstitial structures losing in length what they gain in circumference, and soon again relapsing into their previous form. Opportunities such as were afforded by this case—the man dying whilst actually under treatment—are very rare. A catheter had been kept in the bladder until a very short time before the death, for no symptoms were noticed by his surgeon, a very able practitioner, indicating the accident that had taken place. The patient evinced merely excessive prostration; he did not complain of pain until a few hours previous to his decease.

In resuming the subject of the *treatment*, I may state that the urine having been discharged, the external surface of the tube should be plugged, and the instrument secured with its point still only just projecting within the bladder, by means of tapes passed through its flanges and tied around a broad piece of india-rubber, which should encircle the penis. The knees of the patient should be raised and supported by pillows placed underneath them, and the india-rubber bags containing hot water being used as before stated.

If the flexible tube be retained without exciting disturbance it may be removed at the expiration of twelve hours after the guide has been reintroduced through it; and then, the appropriate metallic tubes having been first passed over the guide, a larger flexible tube may be introduced and retained, as in the prior instance. By this mode of proceeding, in seven days a hard cartilaginous stricture has been so far dilated that a common No. 12 sound or catheter could be easily passed; but as a rule the safety of the patient would be best consulted by not endeavouring to obtain such a result in less than a fortnight from the commencement of the treatment, the more extended term allowing to the urethra a more protracted repose between the different operations. The strictly medical treatment accompanying these proceedings is too plainly indicated to require description.

Non-malignant strictures of the rectum and the œsophagus may be treated effectually with instruments constructed upon the same principles with those employed for the dilatation of contractions of the urethra.

The rectum instruments consist of a flexible guide of soft metal or elastic gum-fabric, and four dilating-tubes, composed of the same materials, ten inches in length, shaped at the discretion of the surgeon, and of different sizes, numbering 2, 4, 6, and 8, corresponding to those sizes on the guage for common rectum bougies. One end of the tube is made upon the same principles as those employed in the construction of those for the urethra, whilst the other end terminates in a broad, everted, cup-shaped rim.

By the means of a long flexible guide, an O'Beirne's tube of a much larger size can be also used. The one on the table is a full quarter of an inch in diameter internally. It is believed that this will prove of great service when the treatment by means of O'Beirne's tube is indicated.

The œsophageal instruments consist of a long flexible guide, and dilating-tubes of elastic gum, twenty inches in length, of different sizes, and manufactured so as to glide over the guide with the same ease as the urethral instruments. I may here advert to the fact of Mr. Erichsen, in his work entitled 'Surgery,' having mentioned a case of œsophageal stricture, in which he used, with considerable advantage, instruments on a similar construction to the urethral tubes.

The instruments for the dilatation of the cervix uteri consist of a guide, eleven inches in length, with a moveable handle, to facilitate its introduction, and of silver and flexible dilating-tubes which glide over the guide in the same manner as those for the urethra, and are made of various sizes, corresponding, in some respects, with those of Professor Simpson, but very considerably lighter. These tubes, at their internal extremity, have the same formation as those for the urethra. The other end is furnished with an inverted, cup-shaped rim, intended to fit the os uteri.—*Lancet, Nov.* 29, 1856, *p.* 589.

95.—CASE OF LARGE PERINÆAL FISTULA.

By W. Colles, Esq., Surgeon to Steevens' Hospital, Dublin.

[R. B., aged 43, states that two years ago he had fever followed by sloughing of the perinæum, for which he has undergone a severe operation, but without benefit. He has frequent calls to make water, and the greater part passes by the perinæum.]

On examination, the right testicle is in the scrotum as naturally, the left is bound down to the external ring by smooth new cutis; the scrotum on this side is deficient. On separating the thighs, instead of the projection of the perinæum there is a funnel-shaped cavity, terminating in an opening, which admits the point of the little finger. A large-sized catheter passes freely into the bladder, and is felt bare by the finger in the perinæal opening, for the space of nearly half an inch.

Before adopting any decided plan of treatment, it was necessary to try the effect of the permanent presence of a catheter in the bladder; and we found that the urethra would readily admit the largest size, and that its presence was attended with no inconvenience, but that the urine could always pass along the outside of it; this, therefore, rather discouraged any plastic operation.

I now recollected having read in a late number of the medical periodicals some cases where the surgeon had effected a closure of cleft palate by the constant application of lunar caustic to the edges of the fissure, though the parts were in motion and acted on by the foreign substances passing over them. I thought the same treatment might be successful here, therefore the catheter was removed, the edges of the opening were touched with a solid stick of nitrate of silver every second day; this treatment caused considerable pain, both in the application of the caustic and on the passing of water; however, after persevering in it for three weeks, we found that no urine passed by the perinæum. He complained of some moisture, which was removed by an astringent lotion. All treatment was then laid aside, and he remained in hospital for three weeks longer, but not the least appearance of urine could be observed in the perinæum.

He left hospital, the opening being perfectly closed.

On the man's admission, I had not much expectation of curing his fistula, because there seemed to be no stricture or other cause to keep it open; also, because the edges of the opening seemed to be very thin, as if merely composed of cutis, and therefore unfavourable for operation. I was still more desponding, when I found the catheter, no matter how large, would not prevent the escape of the urine, although it was well borne in the bladder. I did not either expect much benefit from the application of the caustic, for I recollected many cases recorded of fistulæ treated by various caustics, and in general without much benefit, scarcely any successfully. I was, therefore, agreeably surprised to find this case progress so favourably and so rapidly, and would be inclined to attribute the success to the constantly repeated application of the caustic keeping up a continued and increasing degree of inflammation and granulation round the edges of the opening; and hence that the failures in previously recorded cases arose from the action of the caustic being too severe, and because the intervals between each application were too long.

The present instance would also hold out encouragement never to abandon those cases whilst the general health holds good, but if one measure fail to try another, and that it is not always the most violent proceeding or the most brilliant operation that is the most successful. —*Dublin Hosp. Gaz., Dec.* 15, 1856, *p.* 353.

96.—*Hydrocele.*—Mr. Lloyd, at St. Bartholomew's Hospital, has been in the habit, for the last twenty years, of injecting about one grain of the red oxide of mercury, through a canula, passing it in by means of a probe. It has never failed to cure in a single instance, and has never returned. We saw an instance of this last plan of treatment this day week, in a man aged sixty-five, who was doing well, the affected testicle resembling a hernia humoralis from the inflammation produced, the testicle being rather tender and painful.—*Lancet, Feb.* 14, 1857, *p.* 164.

RARY

DISEASES OF THE EYE AND EAR.

97.—ON THE USES AND ACTION OF BELLADONNA IN OPHTHALMIC PRACTICE.

By T. Wharton Jones, Esq., F.R.S., Ophthalmic Surgeon to University College Hospital.

Belladonna is an agent of the highest value in the treatment of various diseases, and especially in the exploration and treatment of certain diseases of the eye.

The forms in which the drug is most commonly prescribed at the Eye Infirmary are:—

1st. Belladonna lotion, to be used as a warm fomentation, composed of half a dram of the extract dissolved in eight ounces of water and filtered through linen. 2nd, Belladonna extract, of the subsistence of honey, for painting over the eyebrows and outside of the eyelids. 3rd, Solution of the sulphate of atropia, two to four grains to the ounce of water, for dropping into the eye.

The lotion is given to patients for use at home in cases of ophthalmia, in which there is great intolerance of light, and, in a large proportion of cases, it exerts a marked influence in relieving that distressing symptom;—it is also given in cases of iritis, for the purpose of opposing the contraction of the pupil. For this latter purpose, and also when it is desired to keep the pupil dilated after the operation of division of cataract or the like, the extract reduced to the consistence of honey and painted over the eyebrow and eyelids, is also sometimes used. For these purposes, however, the sulphate of atropia solution dropped into the eye is in general more agreeable to the patient. When we want to dilate the pupil for the purpose of exploring the interior of the eye, a drop of the solution of the sulphate of atropia is applied to the conjunctiva, and the effect is obtained in about ten minutes.

It is to be observed that belladonna, even in its external application, requires to be employed with precaution.

When we prescribe belladonna internally it is usually either in the form of the powdered leaves or in that of tincture.

We are in the common habit of ordering, and generally with good result, one or two grains of the powdered leaves with two or three grains of hydrarg. c. creta twice a-day for two or three days, at the commencement of the treatment of scrofulous ophthalmia and scrofulous corneitis, in which, as I have mentioned, we also order the belladonna lotion to the eyes.

The tincture of belladonna we give in doses of about ten drops to grown-up persons, to relieve neuralgic pains about the eye, and even the pain attendant on internal ophthalmia, which it sometimes does relieve in the most astonishing manner.

In a case, for example, to which I shall by-and-by refer, a paroxysm of pain was almost instantaneously relieved every time a dose was taken.

Of course, if it is necessary to observe caution in the external use of belladonna, it is still more so in its internal use.

The great therapeutic value of belladonna, as well as its dangerous qualities in an over-dose, which I have thus glanced at, makes it, you will acknowledge, worth some pains to study its mode of action on the system. In reference to this point, therefore, I beg your attention to the following observations:—

In the course of my researches on the state of the blood and the blood-vessels in inflammation, I found that the application to the frog's web of a solution of the sulphate of atropia (four grains to the ounce of water,) was followed by constriction of the arteries of the part in about the same time that dilatation of the pupil supervenes on the dropping into the eye of the same solution.

The application of a stronger solution of atropia was followed by a still greater degree of constriction of the arteries. And the effect of this constriction of the arteries on the flow of blood in the web was partial congestion in the capillaries and venous radicles.

As the constriction of arteries is owing to contraction of the circular fibres composing their muscular coat, it follows that the *modus operandi* of the atropia in this case must be to excite the contraction of those fibres.

In first recording the observation which I have now mentioned, in my Essay "On the State of the Blood and the Blood-vessels in Inflammation," published in 1850, I identified the action of atropia in exciting contraction of the circular fibres of the muscular coat of the arteries, with its action in exciting dilatation of the pupil; which action I considered to be by causing contraction of the radiating fibres of the iris. This opinion I had previously enunciated in my "Principles and Practice of Ophthalmic Medicine and Surgery," (1st Edition, published in the beginning of the year 1847,) to the effect that, "considering the state of relaxation of the iris is that in which the pupil is neither much contracted nor much dilated, as I had many years before insisted, and that contraction and dilatation of the pupil are manifestations of an active state, the former of the circular, the latter of the radiating fibres of the iris, it is to be inferred that the action of belladonna in producing dilatation of the pupil consists in calling forth, through the medium of the ganglionic system, the contraction of the radiating fibres. These fibres, it is to be remarked, differ from the circular fibres, being immediately under the influence of the ganglionic system."—p. 95-6.

The passage now quoted was, in the first edition, followed by a conjecture that the action of belladonna on the arteries consists in determining contraction of their walls, they being like the radiating fibres of the iris under the influence of the ganglionic system. I had in view the fact long before known, that section of the sympathetic in the neck is followed by contraction of the pupil, and vascular injection of the eye.

In the second edition (published in 1855, that is, after I had become convinced, by direct microscopical observation, of the constricting effect of atropia on the arteries,) the same passage occurs, and is succeeded by the remark, that "This action of belladonna in dilating the pupil, [by exciting contraction of the radiating fibres of the iris,] is analogous to that which I have found it to possess of determining constriction of the small arteries of the frog's web ; their circular fibres being, like the radiating fibres of the iris, under the influence of the ganglionic system."—p. 27.

Leaving for the moment the consideration of the action of belladonna on the pupil, let us endeavour to trace its constricting action on the small arteries, as visible under the microscope, in those more palpable phenomena which are evidences of its operation on the system.

To take first the appearances presented by the conjunctiva from the use of atropine solution as drops for the eye.

A gentleman, affected with cataract, occasionally used, on my recommendation, drops of a solution of atropia for the purpose of dilating the pupil, in order to improve the sight, until it should be considered proper to operate.

The use of the atropia, though it improved the sight, always induced such congestion of the conjunctiva, that I considered it proper eventually to recommend its discontinuance. The opacity of the lenses having now considerably increased, the discontinuance of the dilatation of the pupil by the atropia necessarily left the gentleman much inconvenienced by the defective sight. The operation was, therefore, had recourse to, first on one eye, and, as soon as the sight was restored in it, on the other, which is now convalescent. But it is not of the operation I wish to speak just now; it is of the congestion of the conjunctiva induced by the atropia drops.

Taught by my microscopical observation of the action of atropia applied to the frog's web in causing constriction of the small arteries, and consequent congestion of red corpuscles in the corresponding capillaries and venous radicles, I viewed the redness of the conjunctiva in this case as the effect of constriction of the small arteries, induced by the contraction of their circular muscular coat excited by the action of the atropia.

When the use of the atropia was discontinued, the conjunctiva recovered its natural paleness.

In cases in which belladonna has been taken in poisonous doses, we behold still more striking marks of constriction of the arteries. For example, the small pulse, the dryness of the mouth and throat, the paleness succeeded by the flushing of the face, the blue injection of the conjunctiva, the coldness and cold sweats.

The small pulse speaks for itself. The dryness of the mouth and throat, which is commonly so early a symptom, no doubt arises from the constriction of the vessels of the mucous membrane of the fauces, and consequent diminution of its secretion. Atropia dropped into the eye is sometimes followed by a dryness in the throat, from its having passed thither by the lachrymal passages.

The paleness of the face arises from the impeded access of blood by the constricted arteries; but gradually red corpuscles accumulating in the capillaries and venous radicles in consequence of the diminished *vis a tergo*, the paleness is succeeded by the flushing of the face.

The blue injection of the conjunctiva is due to the same cause as I have already explained.

The coldness and cold sweats are owing to the general venous congestion.

To the general venous congestion dependent on the constriction of the arteries, may also be ascribed the cerebral symptoms—the diminution or loss of muscular power, &c.

Whilst in the course of my researches on the state of the blood and the blood-vessels in inflammation, I found that the application to the frog's web of a solution of the sulphate of atropia was followed by constriction of the arteries of the part and stagnation of blood in the corresponding capillaries and venous radicles. I found that the application to the frog's web of certain other agents produced a contrary effect, viz., dilatation of the arteries and a brisker flow of blood, and the dissipation of any congestion which may have existed at the time. The agents referred to are what are commonly called irritants or stimulants. Those which I principally used in my experiments were a solution of sulphate of copper (gr. xvj. ℥j.) with vinum opii (ʒj),—or vinum opii alone,—or Battley's liquor opii,—or spirit of wine.

The primary effect of these and such like irritating or stimulating applications was constriction of the arteries, but that was only momentary, being quickly followed by dilatation. Often the dilatation was unpreceded by any constriction.

As constriction of arteries is owing to contraction of the circular fibres composing their muscular coat, dilatation of arteries must necessarily be owing to relaxation of the same fibres. It follows that the *modus operandi* of the agents I have mentioned must be the contrary of that of belladonna.

This I found by direct experiment and microscopical observation to be the case; thus:—

An artery of the frog's web was noted, under the microscope, to be varicosely constricted, almost to obliteration, after the application of atropia to the web. The blood was no more than flowing in the vessel, when I applied Battley's liquor opii. The effect was full dilatation of the artery, and brisk flow of blood. In another case, sulphate of atropia solution having decidedly determined constriction of the arteries and partial stagnation, the sulphate of copper solution, with vinum opii, was applied, and caused dilatation of the arteries with briskness of the flow of blood, but not to so great a degree as in cases where no atropia has been previously used.

On the other hand, I have remarked that arteries which have been caused to dilate by the application of Battley's liquor opii, or the solution of the sulphate of copper with vinum opii to the web, may be made to contract again by washing away those substances, and applying atropia instead.

What is the effect on the pupil of irritating agents such as those I have mentioned, dropped into the eye?

Contraction.

But is the contraction owing to relaxation of the radiating fibres of the iris, or to contraction of the circular fibres?

I shall return to this question. Here I mention the fact that the pupil is caused to contract by the very agents dropped into the eye, which may at the same time have the effect of removing congestion of the conjunctiva by inducing relaxation and dilatation of the small arteries, the constriction of which had led to the congestion. Having shown by microscopical observation and experiment, that the action on the arteries of certain substances commonly called stimulants, is antagonistic to that of belladonna, and having read in that action the dissipation of congestion of the conjunctiva, whether induced by the action of belladonna or by the action of cold as in catarrh, let us now ask, what are the agents which have been found to operate as antidotes to the poisonous effects of belladonna?

The answer is, stimulants, diffusible stimulants such as ammonia, brandy, &c., the very agents which, when duly applied, cause dilatation of the arteries, and a free circulation of blood.

Although belladonna has the effect of inducing constriction of the arteries and consequent congestion, it appears to exert an influence in relieving inflammation of a certain kind. For example; the irritable inflammation of the erethitic form of scrofulous ophthalmia, in which the visible vascular injection is in small proportion to the functional disturbance.—*Med. Times and Gazette, Jan.* 10, 1857, *p.* 27.

98.—*Circumcision of the Eye in Cases of Vascular Cornea.*—In two or three cases of very severe chronic vascularity and thickening of the layer of conjunctiva in front of the cornea, Mr. BOWMAN, at the Moorfields Hospital, has performed the operation of circumcising the eye, as recommended by some continental surgeons. The operation consists in dissecting up with a small sharp-pointed knife the conjunctiva at the margin of the cornea, reflecting it all around on to the sclerotic, and cutting wholly away a circular band of moderate width. If the patient be under chloroform, the dissection, although very delicate, is not one of difficulty. Its object is to cut off altogether the supply of blood to the corneal layer of conjunctiva, in the hopes of making the latter shrivel away, and cease to be an impediment to vision. An old practice was to scarify the vessels leading to the vascular cornea, but in this their trunks were merely cut across, and usually reunited almost immediately, only the most temporary benefit being obtained. But according to the recent proposal of taking wholly away a band of conjunctiva all round the cornea, this rapid re-establishment of the vascular channels is prevented. Mr. Bowman has made the trials quite by way of experiment, and without, we believe, any very sanguine expectations as to results. In one case, done a few weeks ago, however, the benefit has certainly been marked.—*Med. Times and Gazette, March* 28, 1857, *p.* 312.

99.—ON SYPHILITIC IRITIS.

By John Hamilton, Esq., Surgeon to the Richmond Hospital, Dublin.

Syphilitic iritis is very easy to diagnose. I have met with only a few instances where it was a solitary symptom of constitutional infection; it more generally accompanies other secondary forms of syphilis, sore throat, affections of the bones, periosteum, or articulations, or some of the varieties of eruption, scaly, pustular, or papular. Out of a very great number of cases of syphilitic iritis, which I have noted and seen, the most frequent accompanying symptoms were the papular eruption and osteitis and periostitis, next to those the pustular eruption and affections of the joints.

Sometimes the eruption and the iritis appear simultaneously, sometimes the latter appears a few days after the eruption. In many cases the eruption has existed several weeks, and is fading away when the iritis begins; of this there is an instance in No. 5 Ward—the young man with acute iritis of both eyes, now well. He had a fading papular eruption, scantily scattered in groups over the trunk and extremities, with periostitis of the clavicle and sternum, when the eyes became attacked.

It is generally rather an early secondary symptom, from eight to twelve weeks or six months, occurring within the first year after infection. It prevails, as it were, epidemically, a number of cases of syphilitic iritis presenting themselves at the same time. Spring and winter appear to predispose to the disease, as the larger number of cases were met with in them. In its most acute and violent form it is certainly more frequent in people whose constitutions have been broken by drinking and dissipation, who are thin, sallow, and delicate looking—an important fact when we come to consider the treatment.

It appears in two forms, the sub-acute and the acute. The subacute is very insidious, and may have committed serious mischief in the deep-seated structures of the eye, before a careless observer had almost been aware of its existence, or the patient being conscious that the sight of the eye was gone. We require particularly to be on our guard, moreover, as the cases which finally become the most acute begin with merely a blood-shot eye, and remain for many days with apparently little exacerbation, till suddenly the inflammation becomes intense, the iris changed, and pupil contracted and opaque.

The progress of the complaint in the ordinary form is this: There is slight uneasiness in the eye, a pale pink zone round the cornea, formed by numerous small, straight vessels, which run to, and stop at, its margin, a discoloration of the iris, at first scarcely perceptible, at last offering a well marked contrast to the other iris. If it is a brown eye, the brown becomes of a lighter tint, if a grey blue eye, there is a tinge of yellow over it, the lustre of the surface of the iris is also lost, giving a dull look to the eye. It has been said that in the case of a brown iris, it becomes of a reddish hue; this, even in the most acute cases, is very uncommon. The pupil gets contracted and irregular, the irregularity sometimes at the upper edge of the iris, sometimes at one side, or below, and arises from a certain extent of the edge being fixed by adhesion to the surface of the lens, and not dilating with the rest of the iris. The edge of the inner circle of the iris gets thickened, a slight haziness is observed in the aqueous humour of the anterior chamber, the pupil also loses its deep black colour, and at length becomes greyish, from a shaggy, irregular deposit of lymph on the surface of the lens. I have seen the pupillary margin of the iris presenting a villous appearance from this deposit. The general symptoms of inflammation become more acute, the redness more intense, and the whole eye and eyelids become red and vascular from the conjunctiva, as well as the sclerotic becoming finally engaged. There is intolerance of light and profuse lachrymation, pain and heat are felt in the globe of the eye; but a most characteristic symptom, scarcely ever absent, is the occurrence of a periodical pain in the eyebrow, often extending to the temple. It usually comes on in the evening, beginning about six or eight o'clock, and lasting the first part of the night, the duration being about six hours. I have known it, however, to be felt severely night and day for the greater part of the twenty-four hours. In a few cases the pain has begun in the morning, and lasted the first half of the day. The surface of the cornea is often observed to be a little less smooth than usual. Should the disease be allowed to go on unchecked, other effects of the inflammation are soon apparent, the iris becomes so thickened that it encroaches on the anterior chamber by approaching closer to the cornea. One or two round, dusky yellow tubercles, of small size, often with a reddish tinge, are seen on some part of the iris, the edge of the inner circle is their most usual seat, they are sometimes rather flocculent, like little tufts. After increasing in size, they break, and discharge matter into the anterior chamber. The pus is small in quantity, and gravitates in the anterior chamber; and as it is usually thick in the morning, after the patient has been lying on his side for some time, it is observed at that side of the anterior chamber, but after he has sat up for a little while, it falls gradually down, forming well marked onyx. I think these tubercles, which are always a grave sign of the severity of the iritis, are pathognomonic of syphilis. I have never yet met with them in idiopathic inflammation of the iris. In a case of idiopathic iritis lately in the Richmond Hospital, though the inflammation was most intense, the redness well marked, the iris discoloured, the pupil contracted, the nocturnal pain more severe than I ever witnessed, yet there were none of these tubercles. Finally, the disease having been left to itself, after the absorption of the matter from the anterior chamber, the eye is left with a discoloured, pale iris, thickened, uneven on the surface, or bulging forward, so as to nearly fill the anterior chamber, the pupil puckered and contracted to such an extent as to be nearly obliterated, probably drawn to one side, the edges and under surface of the iris adherent to the capsule of the lens by bands of lymph, the capsule itself is white and opaque, sight either quite lost or reduced to the perception of light or of dark bodies passing between the eye and the light.—*Dublin Hospital Gaz., Nov.* 1, 1856, *p.* 289.

100.—*Extraction of Cataract through a Closed Pupil.*—The practicability of performing extraction of the lens, in cases in which the pupil is closed by adhesions to the capsule, which has recently been demonstrated by Mr. Critchett at Moorfields, is one of the most valuable of the advances lately made in ophthalmic surgery. It enables relief to be afforded to a large class of cases heretofore deemed all but hopeless. The operation has now been performed by Mr. Critchett and his colleagues repeatedly, and is in some respects and in certain cases even more easy than extraction in a healthy eye. The iris being fixed, there is no danger of wounding it from its getting over the edge of the knife, nor is there much risk of escape of the vitreous, or of prolapse of the iris into the section. The principle is so simple that, like many other invaluable discoveries, one wonders it had never suggested itself before. In cases of adherent pupil the adhesions are to the capsule, and not to the lens itself; and the former having been well lacerated, the latter is found to be as loose as in a healthy eye. A second needle operation for getting rid of the capsule, after the section has well healed, is of course generally necessary, as indeed is very often the case after ordinary extractions. In some cases of closed pupil it must be admitted the operation is of great difficulty; when, for instance, the whole margin of the pupil is firmly united, and too rigid to allow of the escape of the lens through it. In several such we have recently seen both Mr. Critchett and Mr. Bowman display admirable operative skill in the use of scissors, &c., to liberate and enlarge the rigid pupillary margin. One case still occasionally seen on Mr. Critchett's days, is of a peculiarly satisfactory nature, inasmuch as it had been given up as hopeless by a very excellent surgeon in another hospital after trial of the ordinary methods. The poor woman had but one eye, and in it a dense yellow cataract existed, with closed pupil. Patient attempts at drilling were made, but with the result of so much irritation and such slow progress, that the surgeon, after repeated operations, gave up the treatment. Mr. Critchett extracted a dense amber-coloured lens, with the effect of restoring sight, with which she can read fairly, and see distant objects well. The lens proved to be so dense in its centre, that the failure of the drilling was well explained.—*Med. Times and Gazette, March* 14, 1857, *p.* 262.

101.—LEUCORRHŒAL OPHTHALMIA, AND OTHER CASES OF INFANTILE LEUCORRHŒA.

By W. R. Wilde, Esq., Surgeon to St. Mark's Hospital, Dublin.

[In a paper contributed to the 'Lancet' by Mr. Moss, of Windsor, in December 1835, we find an account of a whole family being affected with leucorrhœa; the report also states that one of the family, an old woman, aged 65, was afflicted with a most severe form of purulent ophthalmia, supposed to be induced by infection from her grandchildren. This was the only case of the kind which had been published at that time. During the summer of 1855, Mr. Wilde says, that he had an opportunity of witnessing the effect of the direct application of the virus to the eye. Numerous similar cases have since been recorded.]

A lady and a gentleman both became affected with a discharge from the genitals; in the female, however, the disease was more virulent, and presented all the symptoms of vaginitis, with the usual excoriations and incrustations consequent thereon. The lady accused the gentleman, and the gentleman the lady. Mutual recrimination ensued, and both parties, strong in their own innocence, felt aggrieved and insulted. Fortunately the police authorities were not consulted in this dilemma, otherwise we might have had it brought before the gentlemen of the long robe, to eventuate, perhaps, in an appeal to the House of Lords. Each party appealed to the surgeon, who, on examining into the state of the case, expressed a desire to see the children, when he found that a girl, eight or nine years of age, laboured under well-marked symptoms of infantile leucorrhœa; that she had slept with her mother, had evidently infected her, and that the mother had given the disease to her husband.

Towards the end of June, 1855, I was brought by Mr. O'Flaherty to see a case of purulent ophthalmia in the person of a female child, aged 7, belonging to a gentleman connected with the medical profession. The upper lid of the right eye was intensely swollen, and presented all the characteristics of virulent purulent ophthalmia; but the usual florid hue and tense shining surface commonly seen in the early and active stage had been replaced by the flabby skin and purplish tint generally indicative of sloughing cornea, and which always ensues upon the supervention of this mischief in that structure. A profuse purulent discharge poured from between the lids, which clotted upon the ciliæ and spread over the cheek; there was not much pain experienced, but considerable fever, characterised by white tongue, hot skin, restlessness, and anorexia was present. The lower lid was also œdematous, but in a comparatively minor degree. There was chemosis of the conjunctivæ, and a most profuse purulent discharge. On getting a glimpse of the cornea a considerable portion of it was found to have lost its polish, and to have assumed the usual ash-coloured appearance characteristic of the destructive process so well known to those conversant with eye diseases. Local depletion, the application of the nitrate of silver in solution, astringent washes, mercurial alteratives until the tongue cleaned, and then the use of bark, were all put in requisition. At first I was in hopes that a process which I have often observed in gonorrhœal ophthalmia, the progress of which had been checked by active measures, would have occurred, and that the external lamina of the cornea alone would have scaled off, leaving a clear surface beneath, or that perforation having taken place at some one point, adhesion of the iris with leucoma would have resulted. The result, however, was not so fortunate; a considerable portion of the cornea sloughed in a short time, and partial staphyloma resulted.

The most curious and instructive portion of this case has yet to be told. On Friday, the 2nd of June, the mother of this little girl discovered that her younger sister, then not quite two years old, had a profuse purulent discharge from the genitals with excoriation and incrustation of the neighbouring parts, and all the other symptoms of infantile leucorrhœa, which are here unnecessary to detail. Aware that such appearances are not uncommon in young children, she made no outcry about it, but, having reprimanded the nursery-maid for not having informed her of the fact, at once commenced to wash the child with her own hands, using the large nursery sponge for the purpose, and applying it freely to the genitals. Upon the night following, Saturday the 3rd, she washed both children herself before their going to bed, and freely used the same sponge in washing the elder child's face and eyes. The next four days followed without remark, the sponge being used with both children indiscriminately. Upon Thursday morning, the 8th, symptoms of inflammation were observed in the left eye of the elder child, and I saw her upon Monday, the 12th, labouring under the symptoms described in the foregoing.

Upon examination of the younger child it was found to be labouring under subacute vaginitis, consequent apparently upon impaired general health. The disease lasted several months, and only yielded to change of air, the use of tonics, and consequent improvement of the constitution.

From the foregoing we learn what has long been suspected, that this is a highly contagious disease, and if such be the case with respect to the eye, I should think it is equally so as regards the male urethra. If then a man or boy has attempted violence in the case of a child or girl labouring under this disease, the chances are that he will receive infection; but if an accused person does not present any appearance of infection, I think it should tell equally in his favour, as if he had been accused of an assault upon the person of a female who was found to be labouring under gonorrhœa, but by whom he was not contaminated. Such cases have occurred. Perhaps experiments may yet be made to test this question as to the communicability of the disease between the sexes.—*Med. Times and Gazette, Jan.* 17, 1857, *p.* 58.

102.—*A New Form of Lotion in Purulent Ophthalmia.*—The interest attaching to eye cases is so great that, even at the risk of being deemed empirical, so that one may save an eye from destruction, we may here give a form of lotion in extensive use in hospitals, due to the practice, we believe, of Mr. WHARTON JONES—a lotion which is almost specific is various forms of purulent ophthalmia and chronic conjunctivitis. Mercury, perhaps it may be said, will rarely, if ever, be required internally in purulent ophthalmia: the utmost decision, cleanliness, and care, are, however, necessary in treating such cases with lotions, as well as sedulous attention to the condition of the *primæ viæ.* Some practitioners prescribe small doses of mercury so as to affect the system slightly; but as observed to his class recently by Mr. Wharton Jones, inflammations of mucous passages are not those that are ever much benefited by mercury. This active agent or leeches may restrain the submucous cellular effusion, and prevent swelling; but we should take care how we affect the bowels and various chylopoietic viscera, by pushing the use of the mineral to ptyalism.

When chemosis is slight, and ulceration has already set in, mercury can do very little good. Tyrrell's plan of scarification, though not very strongly recommended by Mr. Dixon, will be found useful, especially in the lighter and more chronic forms of ophthalmia; and where we require a lotion in place of that usually made of nitrate of silver, the following, in an ounce bottle, is best, with or without leeches.

℞. Cupri sulphatis gr. ij.; vini opii ʒj.; aquæ dest. ʒvij. Fiat lotio. It is applied freely with a soft camel's hair brush three times a day.—*Association Med. Journal, Sept.* 27, 1856, *p.* 826.

103.—ON OCULAR ANÆSTHESIA.

By M. CHASSAIGNAC, Surgeon to the Hôpital Lariboisiere, Paris.

[M. Chassaignac believes that chloroform is destined to render great service in the treatment of ocular diseases, provided its mode of action be thoroughly understood. He has examined carefully the influence of this agent on the eyelids, conjunctiva, on the motions of the eye, and also on the contractions of the iris.]

1. When the process of inhalation has been carried sufficiently far to obtain muscular resolution, the constant effect of chloroform is to render the eyeball completely motionless. This symptom is by far the most constant of all, since the dilatation of the pupil undergoes numerous variations, and is sometimes succeeded by contraction, in the most advanced stage of anæsthesia.

2. Another phenomenon, which appears equally to deserve notice, especially as regards the operation for cataract, is, if we may borrow the expression of Barthez, the "power of fixity" which the eye acquires under anæsthetic influence; whatever its position may happen to be when the state of anæsthesia begins, that position is invariably retained throughout the whole duration of the experiment. During the period of insensibility, the eye is usually turned upwards, and lies concealed under the upper eyelid; it then becomes quite impossible to move it by the mere pressure of the fingers, without the assistance of an instrument—a fact of the highest importance, since it might in certain cases become an obstacle to the operation for cataract.

The two preceding propositions may at first sight appear identical, "immobility" and "fixity" being synonymous; but if language establishes no great difference between the words, clinical facts do so, and in the following manner. If we compare the state of the eye on the dead body with that under which it is placed through anæsthetic influence, we find that the eyeball on the dead body lies no doubt motionless, but the fingers easily move it in any given direction; we can incline it downwards, upwards, right or left, without difficulty. In the state of anæsthesia, not only is the eyeball motionless, but it lies fixed in a determinate position, which the pressure of the finger is totally insufficient to alter. As a whole, the eyeball may of course be displaced, but it ceases entirely to revolve either on its vertical or on its transverse axis. This fact, which is of the highest importance in a physiological point of view, is worthy of attention. It is evidently due, in our opinion, to the simultaneous tonic contraction of the four recti and the two oblique muscles, which maintain the eye in a state of perfect immobility. Is it not, however, an interesting fact to the physiologist, that while chloroform places the muscles of the entire body in a state of resolution, its action should be directly the reverse on the muscles of the eye, which enter, under its influence, into a species of spasmodic contraction, entirely at variance with the general state of the patient?

3. The immediate consequence of the above-mentioned fact is the tendency of the humours contained in the different chambers of the eye to escape as soon as the membranes which surround them are divided.

4. The action of chloroform on the eye may be divided into two distinct periods, the results of which ought not to be confounded

—1st, during the state of excitement; 2ndly, during the state of collapse.

Irritation is the first effect produced by chloroform on the conjunctiva; we therefore see most patients close their eyes during the first period of inhalation. The next result is, a modification of the contractile powers of the iris; and this exceedingly complicated part of its action deserves special attention. During the first period of anæsthesia, and consequently in the stage of excitement, chloroform produces a considerable dilatation of the pupil; but, strange to say, at the moment when insensibility is complete, the pupil, formerly dilated, contracts a few instants after the eyelids are opened. This physiological action seems to belong to the singular class of phenomena described under the name of reflex actions; for in that stage the brain receives no luminous impressions from without. We therefore see that surgeons who expect to find the pupil expanded under the influence of chloroform might be considerably surprised by the phenomena we have just described. This fact has led us to state in another paper that chloroform is a bad dilator of the pupil.

5. The eyelids present another singular phenomena, equally deserving our attention, and which we have described under the name of "immobilité cadavérique des paupières." In a certain number of cases, when anæsthesia has been carried to a considerable extent, the eyelids remain motionless, and if opened do not close again. This remarkable fact appears almost alarming to those who witness it for the first time. So great is the absence of muscular tonicity that it seems impossible the vital powers should not be deeply endangered after spontaneous action has so completely disappeared.

6. Another fact, which should always be present to the operator's mind, is the sudden re-appearance of the pupillary contraction, according to laws hitherto unknown. The pupil is often seen to contract after considerable expansion, without any known cause. This takes place in the operation for cataract, after the lens has been removed.

7. The age of our patients does not seem to exercise any definite influence upon the general results of the experiment; it seems, however, that constitutional debility facilitates the action of chloroform upon the eye, the patient's vital resistance being considerably diminished.

The study of these peculiar phenomena is far from being so easy as one might be led to imagine. There exist innumerable difficulties and causes of error.—*Lancet, April* 18, 1857, *p*. 395.

104.—ON THE OPHTHALMOSCOPE.

By Jabez Hogg, Esq., Assistant-Surgeon to the Royal Westminster Ophthalmic Hospital.

[The merit of the invention of this instrument chiefly belongs to Mr. William Cumming, although the Germans were the first to bring it before the notice of the profession.]

The ophthalmoscope I use is a small circular mirror, of about ten inches focus, being nothing more than the small size mirror belonging to the ordinary microscope, having a hole bored in its centre, and afterwards mounted in a piece of tortoiseshell. The form of instrument in general use is that known as M. Rüete's, or M. Anagnostaki's. I have also used those of M. Coccius, M. Jaeger's, a small portable instrument, so contrived, with the lamp affixed in its proper position, to be always ready for use. The mode of using the instrument is as follows:—The rays from the flame of the lamp, reflected by the concave mirror, fall in a state of convergence on a convex lens, in front of the eye to be examined. By this the rays are so much converged by the additional refraction they undergo on entering the eye, that they quickly come to a focus, cross, and are dispersed over the retina, so that this membrane is fully illuminated. The observer's eye looks through the small central aperture in the middle of the concave mirror, which he holds in his hand. The patient whose eye is about to be examined, should be taken into a darkened room, and seated by the side of a table, on which is placed an ordinary lamp. The lamp must be brought near the patient's ear, and the flame so arranged that it may be in a straight line with the eye. The observer having taken his seat before the patient, on a stool capable of being raised or lowered. (As a rule it is better to sit a little higher than the patient.) The reflecting surface of the instrument is then to be turned towards the eye to be examined, in such a way, that the eye of the observer, when looking through the small central hole, may see, from turning the instrument a little inwards, a luminous reflection of the interior of the patient's eye. On withdrawing it gradually, the reflection grows smaller, until it becomes oblong and very brilliant. It is in this way, or slightly modified according to circumstances, that the alterations in the several structures of the eye are to be observed. In the examination of most eyes we are obliged, for the sake of seeing the changes more clearly, to use a bi-convex lens of about two inches focus. Short-sighted people have an advantage, by being able to see clearly without this lens.

There are one or two little practical details which the beginner will do well to observe. In the first place, during the examination, the *right* eye (supposing the left to be used in looking through the apparatus in the mirror) must watch the movements of the globe of the patient under examination, and the reflection of the mirror at the same time, to see that it is kept upon the patient's eye The light should not be too strong; a moderate light enables us to note the appearances without its producing fatigue to the patient. For ordinary examinations, the concave mirror is to be preferred; but when a feeble light only can be borne, or we wish to direct our examination to the changes in the vitreous body, or the anterior part of the lens, then the plane mirror will be found to be the best suited to the purpose. Every examination ought to be begun without using the convex lens. It must not be forgotten that the concentration of a powerful light on the retina, if continued for more than a few seconds, does of itself place the part in an unnatural condition.

Next, with regard to our dilatation of the pupil with *atropine.* Although it would be next to impossible to investigate some cases without the use of this agent, yet, as a rule, I use it as little as possible; believing, from its known peculiar power over the iris, that it may produce congestion of the whole of the vessels to such an extent as to seriously embarrass the diagnosis. Atropine, to act on the pupil, must be first absorbed, and then it is said to exert a powerfully paralyzing effect on the third pair; patients complain of the annoyance caused by such dilatation, which often continues for some days. Should the sight afterwards become worse, then of course the surgeon will be blamed, and is said to have caused an aggravation of the disease.

You will find, in the greater number of cases, when the patients are taken into a darkened room, and a moderate lamp-light only used, the pupils dilate sufficiently for examination. When the rays reflected from the mirror are first allowed to fall upon the fundus of the eye, a diffused glare only is noticed, but as soon as the proper focus has been attained,—which is known by a whitish circle with ramifying vessels coming into view, when the patient turns the eye slightly inwards,—then this red changes into an orange-red, or a tint of a lighter colour, as the case may be. The optic nerve is seen faintly tinged with pink, and from its central papilla emerge the artery and vein of the retina; the arrangements generally being, that an artery and vein pass upwards, and a similar pair downwards; both sorts of vessels then divide into many branches, which run towards the periphery of the retina.

The red colour, in the healthy eye, varies in tint, and this is governed, as Mr. Cumming pointed out, by the complexion of the individual; in the fair, it is brighter; in the dark, it is more of a yellowish brown. The redness is owing both to retinal and choroidal vessels, the former being distinctly seen branching on the uniform red field formed by the more vascular choroid, showing through the transparent retina. The arteries are distinguished from the veins by their less breadth and brighter colour. The mode of ramification of these vessels varies somewhat in different persons. The veins lie sometimes under, sometimes over, the arteries, and accompany them, so far as regards the principal branches, more or less in their further course. No vessel of any kind covers the foramen centrale, or yellow spot, at least so far as I have been able to make out. In the examination of all objects lying behind the lens, it must be borne in mind that we are looking through that body, and consequently what we see is magnified. Then, again, by using a magnifying-glass to examine the changes in the retina, or increase the illumination in the interior of the eye, we must allow for the difference in intensity and size of the picture. I more particularly draw attention to this fact, as all my pictures have been made during examinations with the convex lens, and are thereby about four times larger than in nature.

Before an estimate can be formed of the pathological changes revealed by the ophthalmoscope, it must be evident that the normal picture presented by the background of the eye demands careful study; and the part borne by the different membranes in the production of this picture must be the subject of particular consideration. Great difficulty will at first be experienced in the appreciation of a depression or a prominence, say of the papilla optica, which depends in part on the alterations produced in the light and shade of inverted images, and the difficulty must be increased if a convex lens is used with the perforated mirror. When examining the condition of the crystalline lens, the plane of the concave mirror alone should be employed, and it must be viewed from every distance, and in an oblique position, as well as immediately in front of the patient. I have frequently succeeded by such means in discovering opacities, when all other modes of investigation have failed. On the other hand, many cases pronounced to be incipient cataract, on a more careful inspection of the defect, I have found to proceed from a deeper-seated cause.

A few days since, a mechanic presented himself at the hospital, who had been pronounced amaurotic. No visible change could be detected in the dioptic apparatus by daylight. I examined the eye with the ophthalmoscope, and perceived a grey-coloured central opacity on the posterior capsule of the lens. The retinoid vessels and optic nerve were at first seen with difficulty, but after a little while were made out to be in a normal condition.

It is quite unnecessary for me to dwell upon the importance of being able to diagnose with absolute certainty the cataracterous form of disease. It is a question we are all often called upon to decide, and one which not unfrequently is as likely to implicate the character of the medical man as the safety of his patient. It is nevertheless at times very difficult to determine, not only the existence, but the seat of the cataract—to say whether the opacity which is seen, is on the crystalline capsule, in the lens, in the vitreous humour, or depends upon a change of the retina, or of the choroid coat.

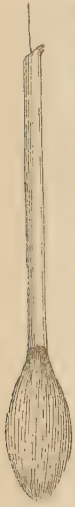
In addition to the well-known subjective or physiological indications of this defect of vision, if the aid of the ophthalmoscope be sought, no doubt can arise as to the true character of the disease, or whether the opacity is *within* or *without* the crystalline capsule, constituting what is known as true and false cataract. In short, the whole of the anatomical changes arising from disease will be found to form so many objective symptoms for our guidance.—*Lancet, April* 18, 1857, *p.* 400.

105.—THE SELF-ADJUSTING ARTIFICIAL TYMPANUM.

By James Yearsley, Esq.

[In cases of injury or loss of the membrana tympani, the introduction of a small piece of wetted cotton into the meatus of the ear, has found the greatest favour with the profession, as a substitute; but a great drawback to its usefulness has been the difficulty of applying it with such nicety by the patients themselves as is necessary to its success. By the present contrivance, the most timid patient may apply the remedy with safety and ease. Mr. Yearsley says]

The invention of which I have now to speak, consists of a silver tube of small calibre, from an inch and a half to two inches in length, and a small piece of cotton to which is attached a soft pliant thread, of two inches or a trifle more in length. The silver tube is provided with a hook at one extremity to entangle the cotton if by any chance it should get disengaged, a circumstance not very likely to happen. The wood-cut represents the tube of the proper length, with the cotton well wetted, drawn through it, and the thread protruding at the hook extremity, all ready for use.



Directions.—The thread is to be drawn through the tube, so as to bring the cotton steadily against its extremity, then having wetted the cotton in tepid water, introduce it into the passage of the ear, holding the tube and thread at the same time with the finger and thumb, then move the cotton about at the bottom of the passage until it reaches a spot which when touched produces the improved hearing: this being attained, let go the thread, and gently withdraw the tube over it, leaving the cotton in the ear; finally cut off the projecting thread, or turn it into the outer cavity of the ear. Should the cotton fall from its proper position, and the improvement of hearing be lost, it may easily be re-adjusted by using the tube as a common probe, and with it, lifting the cotton into its place.

General Observations.—For cleanliness' sake the cotton should be changed daily, and unless the discharge be very profuse, it is better not to interfere with it before applying the cotton. One of the happy results of the continued use of this remedy is to *cure* the discharge of the ear. On this, if on no other account, cotton wool will always have the preference over other substances, in this peculiar mode of treating deafness. Its chief advantages over every other material may be thus enumerated:

1. It is more easily applied. 2. It is simple, safe, and cleanly. 3. It retains its proper position longer. 4. It causes no irritation. 5. It produces no noises in the ear whilst eating or talking. 6. It is more agreeable to the feelings of the patient. 7. It produces the highest degree of hearing, of which a patient with perforated membrana tympani is susceptible. 8. It cures the discharge of the ear which usually attends loss of the membrana tympani. This result is so uniform that I have ceased for some years past to treat ordinary cases of otorrhœa by injections, preferring to relieve the patient of the discharge by the use of wet or dry cotton, more especially as the hearing is almost

always benefitted by this mode of cure, whereas the sense suffers by the application of astringent injections.

In rare cases, owing to rough usage in the application of the wetted cotton, the ear becomes irritated and rebels, as it were, against its use, but beyond the tenderness which is felt by the patient, no other inconvenience arises, and never any injury to the ear; while this state of irritation lasts, (generally two or three days,) it is better to discontinue the cotton, and soothe the ear by fomentations and poultices. Strange to say, this irritation seldom or never recurs, and the ear ever afterwards quietly submits to the presence of the remedy.

Three or four experiments will generally enlighten the patient as to the proper size of the cotton for his individual case. Success is generally made manifest to the patient by a click, or pop, arising, as I believe, from the bursting of a small bladder of air formed by the discharge which is usually present. Sometimes it is necessary to lift up the cotton after it is introduced, which, as I said before, can be done with the silver tube used as a probe, for it is a *sine quâ non* that the cotton should *not* entirely cover the opening into the cavity of the tympanum.

It is evident that unless some noise is going on of uniform loudness at the time of the experiment, the patient would experience a difficulty in estimating the success of the remedy. In my own consulting room, I have an instrument which I have called an *acoemeter*, having gradations of sound, and this is set going before commencing and during the application of the cotton. The patient is then directed to make some sign the moment success is attained. A metronome would answer the same purpose, and in the absence of any instrument of the kind, scraping the floor with the foot, rubbing the hand over the clothes, or snapping the finger and thumb while manipulating, will be sufficient to indicate to the patient the attainment of his wishes.

In conclusion, I may truly say that nothing can be more simple than the invention, and nothing more important than the effect it is intended to produce, for it is no less than the restoration of the blessing of hearing to a class of persons whose disease, until the application of the cotton was discovered, was deemed incurable.—*Med. Times and Gazette, Dec.* 20, 1856, *p.* 630.

106.—ON POLYPI OF THE EXTERNAL MEATUS.

By J Toynbee, Esq., F.R.S., Aural Surgeon to St. Mary's Hospital, and Consulting Aural Surgeon to the Asylum for the Deaf and Dumb.

In all cases of discharge occurring from the external meatus, the first step is to use a syringe so as thoroughly to cleanse the meatus. When this has been done, there is no difficulty in determining whether a polypus be present, although it may be situated close to the membrana tympani. Polypi occurring in the external meatus may be divided into three classes.

1. The one of most frequent occurrence, which may be called the raspberry polypus.

2. That which has been termed the gelatinous polypus.

3. The globular polypus.

I shall speak of each of these classes separately.

1. The cellular raspberry polypus.

I have given this name to the polypus most frequently met with, and which consists of numbers of round beads, somewhat similar in appearance to the free surface of the raspberry. These beads are attached by means of small filaments to a central stem, which forms the root. It is frequently covered by ciliated epithelium, and when examined microscopically its interior is found to be composed of small rounded cells. It is usually so soft that upon being taken hold of by the ordinary dressing forceps, it breaks up and bleeds freely. The raspberry polypus varies much in size; sometimes it is not larger than a grain or two of mustard seed, at others it fills the whole of the meatus and projects from the orifice. The parts of the meatus to which this kind of polypus is attached are very various; as a general rule they are attached to the inner half of the tube, and frequently close to the membrana tympani. When small, their colour is usually a deep red; but when they increase in size they become more pale, and the rounded masses considerably increase in size. The formation of these polypi is often attended with considerable pain and by a discharge of blood. It is not uncommon for this polypus to remain undisturbed during several years, the whole of which time it throws off a most offensive secretion without producing symptoms sufficiently urgent to induce the patient to apply for relief; in other cases the head symptoms are so distressing as to cause serious alarm. These polypi are usually the result of irritation in the tympanic cavity, and they are frequently symptomatic of obstruction of the Eustachian tube.

Treatment.—The treatment usually adopted consists either in applying astringent lotions and drops, or in endeavouring to remove the mass by means of an instrument. With regard to astringent applications, there can be no doubt that they exercise no beneficial effect either in preventing the growth of the polypus, in diminishing its vascularity, or the quantity of the secretion which it throws off. The same remark applies to the use of the nitrate of silver; under the influence of a strong solution of this substance, or of the solid nitrate of silver itself, I have seen the cellular polypus not only retain its vascularity, but rapidly increase in size. The two plans I have adopted for the removal of these polypi are the application of the potassa cum calce and the use of the lever-ring forceps. I will speak of these two plans separately.

1st. *Of the use of the potassa cum calce.*—In the early part of the year 1852 I published a series of papers, in which I advocated the use of the potassa cum calce. Since that period I have suggested the use of the lever-ring forceps, the operation of which is so satisfactory that

I now but rarely use the potassa cum calce. Inasmuch, however, as the majority of medical men are not likely to possess that instrument, and, as the use of the potassa cum calce appears to be the next best plan for the removal of these polypi, I will give the result of my experience with it. In the first place, it is important that the substance used should be made into very thin sticks. Those supplied to me by Mr. Squire, in the form recommended by Dr. H. Bennett, answer the purpose extremely well, so long as they retain their size and form; but, as this substance deliquesces very rapidly, it is important that the greatest care be taken to keep it excluded from the air. For use at this hospital the potassa cum calce has been manufactured by Bailey, of Wolverhampton, and this was re-cast into smaller sticks by Hopkins and Williams, of New Cavendish Street. This material contains a small quantity of iron, which makes it firmer and much less deliquescent than when made in the usual way. The latter preparation, as not requiring so much care in its application, is, perhaps, to be preferred for those who are not often called upon to make the application, although that which does not contain iron is certainly the most efficacious.

In the application of the potassa cum calce the first step is to syringe out the meatus with tepid water, and then to dry it with cotton wool. The patient should then be placed before a strong light, so that the surgeon has a distinct view of the polypus. He may then take a stick of the caustic in the right hand while he holds the ear back with the left; and great care must be taken not to touch the surface of the meatus, which is so extremely sensitive that the pain produced by the action of an escharotic upon it is very acute. For the purpose of protecting the meatus an oval glass tube may be used; it is to be passed down the meatus as far as the polypus, and by gentle pressure a portion of the polypus may be made to enter the distal end of the tube. The polypus, unlike the meatus, possesses but little sensibility, and the potassa is to be pressed gently against it, the immediate effect of which is to decompose the whole of the substance to which it extends. If a pair of rectangular forceps be employed, neither the hand of the surgeon nor the instrument he employs prevents the operator seeing the polypus while he is making the application, and he can be sure that he touches the whole of the free surface. If this operation be carefully effected the patient scarcely complains of pain; but if any portion of the escharotic reaches the surface of the tube, the pain is described as being most acute. It can, however, be immediately arrested by syringing the ear with warm water, which should always be close at hand. Supposing the potassa to have been thoroughly applied, the colour of the polypus at once changes from a bright red to a livid hue. After the operation the patient should sit still for three or four minutes, and if the glass tube has been employed it should be allowed to remain fixed, as during the operation. Upon inspecting the polypus after three or four minutes it will be found to be broken up, to have blood oozing from it; and, instead of its former rounded head, it presents an uneven pulpy mass. The meatus is now to be syringed out with tepid water, when blood, mixed with the *débris* of the polypus in a filamentous form, comes away; the surface of the polypus still remains of a dark colour, and during several hours a process of slow dissolution takes place in all that part which the escharotic has reached. If the cotton wool has rendered the polypus quite dry, it is desirable to moisten the potassa very slightly. As a general rule, the potassa may be again applied the following day; the process already described is to be gone through until the whole of the mass is destroyed.—*Med. Times and Gazette, Nov.* 8, 1856, *p.* 459.

107.—*On Auscultation of the Ear.* By M. GENDRIN.—M. Gendrin, believing the diagnosis of the diseases of the deep seated portions of the ear may be facilitated by the employment of auscultation, communicates the results of six years' examination of the subject. The auscultation may be either mediate or immediate, and the patients' nares should be closed.

In the physiological condition every expiration produces in the tympanum a deep, gentle, distant *bruit de souffle*, which passes away before the end of the expiratory movement. If the *membrana tympani* is perforated, this sound becomes acute, dry, sometimes even sibilant, and is more prolonged. When the Eustachian tube is narrowed, it becomes intermittent, consisting of several successive *souffles*, which are usually accompanied with bullar crepitation due to mucosities. Crepitation may be heard when there is caries of the internal ear, or when there is a collection of matter on the middle ear, or in the mastoid cells, in communication with the tympanum and the open tube; but here the crepitations are deep and moist. Coughing renders these abnormal sounds shorter and more clear, so that they are more easily recognised.

Inspiration, in a sound ear, does not give rise to any perceptible sonorous vibrations; but if the membrane is pierced, the Eustachian tube remaining pervious, a very sharp sibilant *souffle*, mingled with moist crepitation, is heard, the patient himself often being conscious of the sound.

The voice, heard in the ear, appears deeper and slightly vibrating, and is interrupted by frequent and sudden intermissions. When the tube is narrowed, or the tympanum is filled with mucosities, by pus or by a central exostosis of the petrous bone, it degenerates into a confused and inarticulate murmur. It is not heard when the tube is obstructed; and it becomes whistling, and is accompanied by crepitating bullæ, when the membrane is ruptured. In the normal state, the labial hissing is transmitted by the ear like a distant acute *sibilant souffle*. It is much weakened or almost silent when the tube is narrowed, and is not heard at all when this is obstructed. When the membrane is destroyed, the tube remaining free, the hissing becomes very acute, and is so near that the patient seems to be whistling in one's ear. In most cases the abnormal sounds may be verified by a comparative auscultation of the ears, as it is rare to find the same degree of the same lesion in the two ears.—*Brit. and For. Med.-Chir. Review, Jan.* 1857, *p.* 272.

DISEASES OF THE SKIN.

108.—ON THE PATHOLOGY AND TREATMENT OF CONTAGIOUS FURUNCULOID.

By Dr. Thomas Laycock, Professor of the Practice of Medicine in the University of Edinburgh.

[The author remarks, that many and important advances have been made in the pathology of skin diseases by the aid of the microscope, especially in those of a parasitic, and therefore communicable nature. Yet much remains to be done before the nature of many inveterate and intractable diseases can be fully elucidated. Probably many cutaneous diseases at present, on account of their visible characteristics, considered widely dissimilar, will be found to depend on a common cause, or class of causes. There are some diseases of a chronic or obstinate character, in which, although microscopical researches have failed to demonstrate a parasitic cause, or a contagious nature, observation and analogy would lead to classify in this group; in particular the *furunculoid* disease may be mentioned.]

Previously to the publication of a clinical lecture, which I delivered to my class at York, on the 25th of February 1851, on the epidemic furunculoid, it was not generally understood, in this or any other country, that boils were ever epidemic; still less, that they were ever associated, as to cause, with those other eruptive diseases with which I then observed it to be associated as to cause; and although I have found one or two incidental notices of the unusual prevalence of boils, and which I shall mention, the general pathology of the disease, as it occurred epidemically, had certainly never been discussed previously to the delivery and publication of that lecture. I then ventured to express the opinion that it was a communicable disease; and, although that opinion has been almost wholly disregarded by succeeding observers and writers, I still, but more decidedly, entertain it, having satisfied myself as to its soundness, by careful observation. Little having been added to our knowledge of the origin, nature, and affinities of the affection, since the publication of my lecture, I shall, at this time, adduce some interesting facts in relation to these points—observing, however, that up to 1851, the epidemical relation of the *materies morbi* to malignant pustule, phlegmon, and onychia, had not been manifested. The disease has usually been designated "furuncular" simply. I at first named it "a new epidemic exanthem," seeing that the furuncular inflammation was by no means the necessary, or even most common form of the disease. Perhaps the term I now adopt, namely the CONTAGIOUS FURUNCULOID, will be found as little objectionable as any, to those at least who may agree with me in opinion. The term furuncular is no more exclusively appropriate than carbuncular, and, as now used, is calculated to mislead the reader as to the true nature of the disease.

In my published lecture of February 25, 1851, I illustrated several varieties of the disease by cases, and indicated the following principal forms:—1. Simple furuncle. 2. Effusive inflammation of the derma, manifested in the form of eczema, pemphigus. and phlyctenæ. 3. Suppurative inflammation of the derma, resembling impetigo and ecthyma. 4. Carbuncular inflammation. 5. Two or more of these occurring coincidentally. More recent observation shows that we may add to these—6. Sloughing gangrene of the lip, eye, tongue, vagina, scrotum, &c. 7. A diffused inflammation of the cellular tissue, returned to the Registrars, as a cause of death of late years. under the term phlegmon; and, 8. Another form, seldom fatal, that of whitlow. I will now refer to each of these specially.

1. *Simple Furuncle.*—The course of the simple furuncle is very definite. An itching is usually first experienced, and then a small hard pimple may be felt in the skin, not larger commonly than a small pea. This enlarges from day to day, and the skin becomes red over it. About the fourth day the centre softens, and on the fifth suppuration is established, with partial destruction of the subcutaneous cellular tissue (the slough or "core"). By the seventh day there is commencing cicatrization. Rarely more than four or five of these occur at once.

2. *The Furuncle, with vesication or pemphigus.*—In the furuncle with vesication, the inflammation is preceded by a vesicle; the pruritus is greater, the erysipelatous redness more extended, and, in bad cases, true phlyctenæ form. These may be prolonged to the fourteenth day. In a few rarely occurring cases there is a phlyctæna only.

3. *Ecthyma.*—In the impetiginous and ecthymatous form, the boils are usually interspersed with ecthyma, impetigo, or eczema. It is not uncommon to find this variety preceded by pemphigoid eruption, in which the serum is opaque and purulent, and terminating in crusts. This sometimes attacks the eye, constituting a stye.

4. *The carbuncular form.*—When the disease is carbuncular, it may appear as true carbuncle, or as a spurious form. in which there is, in fact, a confluence or blending of furuncles. Both these are usually seen on the nucha, back, or loins. The true carbuncle may be either solitary, or, as is most common, may arise amongst a number of furuncles.

The eruption in all these forms is usually seen on the back, nates, thighs—less frequently on the legs and face, still less so on the trunk. The bend of the joints, or the ends of the fingers (as in whitlow), are not unusual situations. The seat of the disease will, however, depend upon the nature and locality of the exciting cause. Wherever a local irritation is induced, there will most probably be the seat of the specific inflammation. A blister is one of the commonest of the exciting causes; the application of a poultice, or of an irritant ointment, a slight blow, and the like, will also act as exciting causes of the disease. A crop of boils is a not unfrequent occurrence after an eruptive fever, as variola, scarlatina, the "dengue," &c. In these cases the cutaneous inflammation operates as an exciting cause, in the same way as the inflammation consequent upon a blister.

The accompanying constitutional disturbance varies much. In healthy individuals it is not at all well marked—in the cachectic the tongue is usually coated, sometimes brown, the appetite impaired, the bowels constipated; occasionally rigors and febrile reaction are manifested, and great debility felt.

5. *The Phlegmonous, Phagedænic, and Gangrenous Forms.*—These seem to occur in individuals who, from some pre-existent morbid state of the blood and of the nutrient forces, are already in such a condition that the ordinary sloughing inflammation of the phlyctena, furuncle, or carbuncle, becomes exaggerated into rapid death of the tissue. The lip and vagina in children are specially prone to become the seat of phagedenic inflammation, not unlike hospital gangrene; more rarely, the scrotum and perineum in the aged. The late Mr. Harvey Ludlow (when House-Surgeon to St. Bartholomew's), called the attention of the profession, in 1852, more particularly to carbuncular inflammation of the lips and other parts of the face; Mr. Stanley and Mr. Lloyd have also observed the affection, and noted its alliance to carbuncular and furuncular inflammation. Happily, these cases are comparatively rare, for the destruction of the tissues is frightful as to extent and character.

6. *Onychia or Whitlow, and Suppurative Inflammation of the Fingers and Palms, and the Palmar and Digital Sheaths of Tendons.*—These forms seem to be of rarer occurrence in the United Kingdom than in the United States and on the Continent. They are not unfrequently followed by contractions of the fingers, caries, &c. They are probably due to circumstances which bring the poison into immediate contact with the hand and fingers. I shall shortly adduce facts in illustration of this view. Dr. Hamilton Kinglake of Taunton, has specially recorded the prevalence of whitlow in Somersetshire, in conjunction with boils and carbuncles.

I have observed that the *materies morbi* of the contagious furunculoid is communicable—

1. From one individual to another.

2. From one portion of the skin to another portion, in the same individual; and,

3. That if this communication be thoroughly prevented, the progress of the disease in a family or in an individual, is arrested.

I have already mentioned examples of the probable communication of the disease from one individual to another, as having occurred in the clinical wards of the Royal Infirmary at Edinburgh. In a similar way, it has been repeatedly observed to spread through families, schools, asylums, &c., where no precautions have been taken to prevent contagion. In such examples, it will usually be found that the affection, although slow in its progress through the population, attacks equally in succession the strong and the feeble, going on unmodified by diet, temperature, seasons, &c. Often, on inquiry, it will be found that the members of a family have had the disease subsequently to the admission into the family-circle of a person affected with it. And, inasmuch as no other reason can be assigned for its spread, which shall with equal comprehensiveness explain it (all theories as to peculiar atmospheric conditions, peculiarities of diet, &c., proving insufficient), it is a reasonable and philosophical conclusion, that it is communicated from person to person,

The mode in which that communication takes place is not so clear, as the following instance will show :—A gentlewoman being confined unexpectedly, had to "borrow" a monthly nurse. In about a week after the latter arrived, the patient had a boil on the forehead ; to this succeeded another on the cheek, over the malar bone ; and to that a third on the upper lip. Upon inquiry, it was found that the nurse had been in attendance, for the two months previously, upon an infant which had numerous boils, and that in the same house with the infant (a boys' boarding school) many of the inmates were similarly affected. In this instance, the nurse had had to feed her puerperal patient only, and to wash her face and hands, so that one might almost conclude that the *materies morbi* had dropped upon her from the nurse. On the same hypothesis, we can explain the occurrence of boil on the *margins* of blistered surfaces rather than on the central portions, the latter being well covered up, the former not.

It is certain, however, that immediate contact of the skin with the morbid fluids of a person dying with the disease will induce it. A very decisive proof of this is to be found in a recent number of the Lancet. A patient in the Devon County Asylum died Nov. 19th, with a large anthrax on his back. Mr. Kirkman (assistant medical officer) made a *post-mortem* examination fifty-six hours after death. The morning following (Nov. 23) he felt heat and smarting on the back of both hands, and on the right eight or nine angry-looking furuncules were observed ; on the left two. Afterwards, fresh ones were developed concurrently with abscesses in the palm, until December 21, when from fifteen to twenty boils appeared on the wrist (subsequently to the application of the poultice) with pain up the arm and shoulder. These appeared in two distinct forms ; some, like the first crop, beginning "red, hot, and painful, with a small white ring around each internal to the inflamed base; others by little vesicles, at first unaccompanied by any active inflammation, but itching most intolerably, and containing a translucent glairy fluid. On the right hand, they all end in the same manner, viz., by the formation of a little purulent core which does not escape, but, on being removed, leaves a very deep small hole;" these, if allowed to scab over, get a second core. On the left hand, the boils had no core, but burrowed deeply and discharged an offensive sanious pus. After the parts were healed, the hand would bleed profusely from the most trifling prick or abrasion. It would appear from this, that extent of application of the *materies morbi* increases its development, for the right hand suffered the worst, being the hand most exposed.

The eruptive form of the disease is either erysipelatous or carbuncular. The former variety is known also as milzbrand rose, *ignis sacer*, and *pseudo-erysipelas carbunculosum.* The inflammation appears first as red spots, which become confluent, and then swollen and hard. The swelling is œdematous, vesicles or phlyctenæ form, and gangrenous softening of the subjacent tissues takes place. Sometimes the death of the tissue is accompanied by an evolution of gas, and an accumulation of it beneath the hide; this constitutes the *emphysema carbunculosum.*

In the true carbuncular form, the carbuncle may be either deep-seated or superficial. If superficial, the skin above is soon livid, and becomes hard and dry, as if mummified; a sphacelus line of demarcation marks its extent. If deep-seated there is great infiltration of the tissues, and the surface is pale; this is termed the "white carbuncle."

There is a variety of the fever characterised by the outbreak of a vesicular eruption over the tongue and buccal mucous membranes, antecedently to the appearance of the carbuncle. This eruption ends in *noma* or gangrenous *stomatitis.*

Perhaps the variety which is the most interesting in relation to the epidemic or contagious furuncle, of late years, is that in which there are carbuncles without the acute putrid fever, so characteristic of the disease. In this apyretic variety, the carbuncles appear, for the most part, on the side of the neck or on the dewlap; they are seen occasionally, however, on the head, chest, loins, and anus, and on the tongue (glossanthrax) and larynx.

Mr. Gamgee, of the Veterinary College, informs us that this variety occurs in the United Kingdom, as anthrax of the tongue and anus, or as "black quarter." It is known to be communicable to man. The *milzbrandt* occurs also in a mild and sporadic form.

There can be no question whatever, that this epizootic pest is a highly contagious disease, nor that the *materies morbi* has, in the more intense forms, a singular energy in devitalizing the blood and living tissues. The saliva, the discharges from mucous membranes, the serum, and the blood itself, all communicate the *materies morbi* of the disease. The peritoneal serum, and the gangrenous fluids from the carbuncles or phlegmons, are in special highly contagious. Greve states, that dogs which lap the serum poured from the ruptured abdomen of cattle dead of the disease, will die on the spot. A few drops of the warm fluid, dropped into the eye of a pigeon, killed it in three hours. A horse was accidentally sprinkled with some on the chest, and although the fluid was washed off immediately, by the following day an enormous carbuncle was formed, and the life of the animal endangered. All things smeared with the flesh, blood, or fluids of diseased animals, as clothes, instruments, the hands of persons, &c., constitute *fomites;* it is even believed to be communicable through the atmosphere. Horses and black cattle suffer the most fatal attacks, but it is communicable from them to man, from man to man, and from man to dogs and rabbits. (Hoffman's and Grense's Experiments.)

The carbuncular fever in man is somewhat similar in its phenomena to an intense form of gastric typhus, or to the true plague; if the carbuncles are not freely developed, death may take place in twenty-four hours, or not until the lapse of two or three days. If they form freely, the case is more favourable.

The carbuncle may, however, be wholly local and apyretic. In this case, it is not dissimilar in its character from some of the worst forms of the current epidemic furunculoid. First, a spot like a flea-bite appears, with a black point in the centre; this itches or is painful, swells, becomes red, and has the appearance of a raised papula, over which there is formed a small bleb or vesicle containing a yellowish or bluish-red fluid. In twenty-four or thirty-six hours, the carbuncle is formed, the centre of which dries and turns black, and round it a circle of vesicles. If the disease is severe, the inflammation extends, and the centre becomes gangrenous and sloughs. If it be a mild form, the morbid process is circumscribed, as in ordinary carbuncle. Sometimes extensive erysipelatous inflammation, ending in gangrene, is the chief characteristic of the local disease. In this way, great destruction of an eye and eyelids may take place; or the lip may be entirely destroyed, if that be attacked, &c. Besides these parts, the neck, tongue (glossanthrax of Pliny), and the arm and hand, are particularly the seats of the inflammation in man.

The modes in which the *materies morbi* is communicated to man, are various. Besides those mentioned, it has also appeared, after flaying an over-driven animal, or after inserting the arm into the throat of sickly cows or oxen, into the rectum of cattle with dysentery, into the vagina of parturient cows, &c.

The treatment of the contagious furunculoid resolves inself into two divisions. 1. The treatment of the cachectic states with which it may happen to be associated; and, 2. The local treatment, including the prevention of the spread of the disease. As to the treatment of the cachectic states, I need say nothing here, the general principles being sufficiently well understood. It is of importance, however, that the diagnosis of the particular cachexia in each case be carefully established, otherwise the treatment may be wholly unsuccessful.

The second indication, namely, to prevent the spread of the disease, merits more careful examination. It may be fulfilled either by rendered the furuncles abortive (if the disease be in that form), or by protecting the sound skin from the influence of the diseased portion. According to my experience, the application of the concentrated tincture of iodine over the incipient boil, rarely fails to abort it. How far the tincture may be useful in the erysipelatous forms, I have no experience. The reports of others are much in its favour. The tincture of the sesquichloride of iron and the nitrate of silver, has been also used for the same purpose, with alleged beneficial results. The gangrenous form would be best treated by the application of strong nitric acid to the sloughing margin.

When the furuncle or carbuncle is well advanced in size, the tincture of iodine may still be used, but a slight puncture at the apex, so that it may be inserted, is advisable. The need for a crucial incision will depend much upon the extent to which sloughing has taken place —a free exit for this is undoubtedly requisite. If there be no large amount of sloughing, the incision may be altogether dispensed with. If suppuration and sloughing seem inevitable, the water dressing is the simplest and most comfortable application. Care should be taken, however, so to apply it that the lint used shall not slip about, and any slough or pus that may be formed, should be carefully removed as soon as possible. In short, the most scrupulous cleanliness should be aimed at. When the pain is great, a lotion may be used instead of simple water, but still in the way of a water-dressing. A combination of the acetates of lead and morphia in solution, is simple and efficacious.

Probably any method of dressing the boil which excludes the air, secures warmth and moisture, and prevents the morbid fluids extending upon the sound skin, will serve as well as the water-dressing. Collodion may be applied to this end. Mr. Flint, consulting surgeon to the Stockport Infirmary, recommends that the boil be well covered with the emplastrum plumbi spread on leather, the plaster being reduced in size at the edges as the swelling diminishes. He has found this method useful for carbuncles as well as boils. No application is worse than a common linseed poultice, for it usually is followed by fresh crops of boils; nor do oleaginous applications do much better.

The *prophylaxis* merits a few words. I have already indicated some of the sources of the *materies morbi*, but it is certain, I think, that these are not all. The local inflammation is of a kind induced by various septic poisons. Of these, that which appears to be generated during a severe and prolonged parturition, is one; probably the poison of puerperal fever is another, and of the Levant plague another. It remains to be determined whether the variolous poison may not, under certain circumstances, be the *materies morbi;* it may be equally a question whether the flesh of animals, dead of dysentery, typhus, pleuro-pneumonia, &c., may not, when used even as food, be a means of communicating the disease. As to all these points, there are analogies in the natural history and behaviour of epidemical and communicable fever-poisons, such as to warrant cautious and careful inquiry.—*Edinburgh Med. Journal, Nov.,* 1856, *p.* 385.

109.—ON SOME DISEASES OF THE SKIN.

By Dr. William Jenner, Physician to University College Hospital, and to the Hospital for Sick Children.

[The division of skin diseases, adopted by Dr. Jenner, is substantially that proposed by Willan, for he considers that this arrangement is eminently practical, and much facilitates diagnosis. But the discovery of parasitic plants in certain skin diseases, by the aid of the microscope, and of the relation between the plant and the disease, have rendered it necessary to found a new order, and to abstract certain diseases from some of the genera of Willan, which are thus rendered infinitely more natural.]

Exanthemata.—[The great characteristics of this group are redness, disappearing or diminishing transiently on pressure. No vesicles, scales, pustules, or elevations of the cutis. They differ from papulæ, in the disappearance of the redness on pressure. True papulæ cannot be removed for an instant on pressure.]

The diseases characterised by red patches disappearing under pressure constitute the order Exanthemata: these diseases are measles, scarlet fever, typhus fever, typhoid fever, erysipelas, erythema, roseola, urticaria.

Hemorrhagia.—[Purpura and scurvy are the only two diseases under this group.]

Hemorrhage into the substance of the cutis occurs, and not unfrequently, in the course of all the acute specific diseases of low type, *e.g.*, small-pox, typhus fever. If the hemorrhagic spots be small we term them petechiæ, if large, vibices or ecchymoses. When small, the spots formed by articular hemorrhage are usually circular; at the bend of the elbow, however, they are oval. When large, they are often very irregular in form.

Vesiculæ.—The third group is characterised by vesicles, *i.e.*, by minute collections of serous fluid seated immediately under the cuticle. Although at first transparent, this fluid ordinarily becomes in a short time opalescent, milky, or even puriform. The cuticle covering is also at first quite transparent; after a while, however, it, like the fluid beneath, grows white and opaque. This change in the cuticle may precede that in the contents of the vesicle. Observe that the fluid of a vesicle is formed on the surface of the cutis, directly beneath the cuticle. The fluid from a vesicle may be absorbed, or it may dry up and form with the cuticle over it a thin scale; this scale may be detached, or it may remain attached and be thickened by fresh secretion beneath it.

If the vesicles be very small and numerous, and the fluid in them contains but little solid matter, than a mere furfuraceous desquamation follows the absorption of their contents, their bursting, or their desiccation; under these circumstances the vesicular nature of the disease may be overlooked, and the desquamation of the cuticle only noticed.

If the fluid contains a larger amount of solid matters, or if the scales first formed be thickened by the drying on them of fresh secretion, then flat scabs of a yellowish brown colour are formed. These scabs are often raised at the circumference. Dry or moist honey-like scabs are never formed by the drying up of vesicles.

It has been said, that vesicles are formed at the orifice of sudoriferous ducts; but, although this may be true in some cases, all vesicles are not so constituted. The diseases or genera of the order Vesiculæ are,—Eczema, Herpes, Sudamina, Miliaria, Varicella, Scabies.

Bullæ.—The diseases belonging to the fourth order of skin diseases are distinguished by the eruption of bullæ; that is to say, by collections of serosity of considerable size, situated directly beneath the cuticle, and raising the cuticle from the cutis. Bullæ differ from vesicles only in size; they vary in diameter from a quarter of an inch to two inches. Now and then the blebs, as they are called, attain the dimension of half a hen's egg. The fluid of bullæ, like that of vesicles, as well as the cuticle over them, may be transparent or opalescent. Bullæ may be followed by crusts or ulcerations. Pemphigus and rupia are the only two diseases belonging to this order.

Pustulæ.—The presence of pustules marks the fifth order. Pustules contain pus from the moment of their formation. The inflammation, on which the formation of pus depends, extends some depth into the cutis; so that the collection of pus which constitutes the pustule is situated in the cutis, and not merely on it immediately beneath the cuticle. When vesicles become opalescent, the opalescence depends on the presence of pus-corpuscles and molecular granules; but these vesicles, whether their contents be transparent or milky, are never sunk into the cutis.

Pustules are followed by thick and dry, or by honey-like crusts.

It is necessary that you should distinguish from each other three kinds of pustules—viz., Psydracia, Phlyzacia, and Achores.

Psydraciæ are very little raised above the level of the cutis. They are often seated in the hair-follicles—a hair passing through the centre of each pustule. The redness around this variety of pustule is frequently very trifling, especially when they are placed at some distance from each other: when near together, however, the skin between may be red, hot, and swollen.

Phlyzaciæ are distinct pustules of some size, seated on elevated, inflamed bases. They are found especially on the trunk and extremities, and they terminate in small brown scabs.

Achores are very small pustules on comparatively large inflamed bases; base and collection of pus, however, form together only a small pustule. Achores are formed in considerable numbers in the vicinity of each other, the cutis between being red, hot, and swollen. They are more common on the faces of children than elsewhere. The secretion from them forms those very large, thick, irregular-shaped scabs, resembling dried honey in consistence, so common on the chins of children.

Impetigo, Ecthyma, Equinia, and Variola are the genera in the order Pustulæ.

Parasitici.—The diseases of the skin in which a vegetable parasite is developed are now arranged together, and constitute the group Parasitici.

The order Parasitici comprehends tinea tonsurans, tinea favosa, tinea decalvans, tinea sycosis, and chloasma.

Papulæ.—Papulæ are solid elevations of the cutis of small size, papilliform; their colour varies from dull white to bright red. When red, the colour may be removed for an instant by pressure, but the elevation remains. Papulæ are supposed by some to be enlarged papillæ, but the researches of Gustav Simon prove that papulæ may be formed at any point of the cutis by the infiltration of the cutis at that point by seriosity.

Three genera belong to the order Papulæ, viz., Strophulus, Lichen, and Prurigo.

Squamæ.—The order Squamæ is characterized by the formation of an excessive quantity of epithelium scales loosely attached to each other and to the cutis. By the slightest friction dry opaque white scales are detached from the diseased surface.

Psoriasis and Pityriasis are the only two genera of the order Squamæ.

Tubercula.—Solid hard elevations of the cutis, much larger than papulæ are called tubercula. In this order are included several diseases, anatomically and pathologically considered, very different from each other; to this I shall advert at length in a subsequent lecture. The order Tuberculum includes molluscum, acne, lupus, elephantiasis, frambœsia, keloid, cancer.

Maculæ.—The diseases of the order Maculæ are characterized by the presence of too much or too little pigment in the parts of the skin affected, and, therefore, by white or dark coloured spots. They are lentigo, ephelis, vitiligo, and nigrities.

Xerodermata.—The order Xerodermata is characterised by roughness, dryness, and loss of elasticity of the skin, without desquamation of the cuticle, or any eruption. Icthyosis and xeroderma (Wilson) are the diseases which constitute this order.

As each order of skin diseases is divided into genera, so each genus is divided into species. The species of some genera differ from each other most decidedly—both anatomically and pathologically. Some species, again, are anatomically almost identical, although pathologically considered, they are very different; while others, although very different in aspect, are pathologically alike. The specific name usually indicates some striking peculiarity of the disease; in some cases a peculiarity in the constitutional state, as in Rubeola maligna, Roseola variolosa; in some, a peculiarity in the local symptoms, *e.g.*, Rubeola sine catarrho; in some, in the form of the eruption, *e.g.*, Roseola annulata, Erythema circinnatum; in others, in the time of the year at which they are supposed to prevail, *e.g.*, Roseola æstiva, Roseola autumnalis; in others, in the seat, *e.g.*, Herpes labialis, Herpes preputialis; in others, in the duration, Pemphigus diutinus; in others, in the number of the spots, Pemphigus solitarius; in others, in the colour of the eruption, *e.g.*, Strophulus albidus; in others, in the sensation of the patient, *e.g.*, Prurigo formicans.

Now I trust you have at least learned practically to recognise an exanthem or red rash, petechiæ, vesicles, bullæ or blebs, three forms of pustules, papulæ, squamæ or scales, tubercles, and maculæ or stains, because the first thing you do when endeavouring to name a skin disease is to determine to which of the orders characterized by these lesions of structure it belongs. You ask yourself, Is this a pustular disease? it is a vesicular disease? is it a squamous disease? &c. If in doubt to which order any special case should be referred, always remember to scrutinise the margin of the diseased patch, as the characters of the primary disease are often well marked there when obscure from the presence of scabs, &c., at the centre; and do not forget, if your sight be not extraordinarily good, to follow my example, and examine the eruption with a magnifying glass of low power.

Roseola.—[This is a disease of trifling importance as regards the safety or the suffering of the patient; but we ought to be able to recognise it in order to relieve the anxiety of his friends. It may be mistaken for measles or scarlatina, or we may suppose the disease to be Roseola æstiva, when it is the prelude to small pox.]

Roseola is so named from its colour, and is characterized by small rose-coloured spots, or a roseate mottling of the skin.

Species of Roseola.—You must not forget that there is one variety of roseola very common in children and young persons of both sexes (hence called by some R. infantilis), and especially prevalent in hot weather (and therefore named R. æstiva), in which rose-coloured spots and mottling give to the skin an appearance very closely resembling that of measles. From the rash of measles, however, that of Roseola æstiva differs, in the absence of a crescentic form or arrangement of the spots,—a character very rarely indeed wanting in measles,—in the very irregular shape of the patches, and in their more rosy and generally paler hue; in their commencing on the most prominent parts of the face and extremities, instead of, as in measles, about the edge of the hairy scalp; in their limitation, not uncommonly, to a small part of the trunk, or to a single limb, and in their irregular course.

Trifling febrile disturbance usually precedes the rash for a few hours, or it may be a day or two, and dryness and redness of the fauces are common. The coryza, so distinctive of measles, is never observed in Roseola æstiva; do not forget, however, that now and then the throat is red, dry, and swollen in measles. Still a measles-like rash, accompanied by sore throat, and without coryza, should lead you to suspect the possibility of the case being Roseola æstiva. If more than one child in the same family is affected, the probability is in favour of the disease being measles; but, then, I have seen two sisters, after an error in diet, affected at the same time with well-marked Roseola æstiva. Sometimes, even when your experience is very large, you will be in doubt whether you have before you a case of Roseola æstiva or of measles.

The duration of Roseola æstiva is by no means constant. The rash may disappear in twenty-four hours, or it may remain out for four or five days. Occasionally it appears again after having once vanished.

A rose-coloured rash, very similar to that of Roseola æstiva, sometimes precedes the eruption of small-pox. It occurs especially at the flexures of the joints. The pain in the head and back and the vomiting which precede the eruption will enable you to suspect the nature of the case, as no such symptoms precede the rash in any other form of roseola. Sometimes this variety of roseola bears a close resemblance to the rash of scarlet fever, and, if not on your guard, you may make the mistake I once made, and have often since then seen others make, viz., that of sending a patient suffering from roseola variolosa to the fever hospital with a certificate that she had scarlet fever.

A similar rash may accompany vaccinia, gout, and rheumatism; it may under these circumstances cover more or less of the trunk and extremities, or it may occur in patches. The specific name is derived from the constitutional disease to which the roseola is secondary; and so we have Roseola variolosa, Roseola vaccina, Roseola rheumatica. The remaining two varieties of roseola differ altogether in appearance from Roseola æstiva. Now and then we see in adults, as well as children, and more commonly on the arms than elsewhere, a few rose-coloured circular spots, varying in size from a threepenny piece to a shilling. These spots are not elevated, or only very slightly so, and their colour disappears on pressure. As this affection has been thought to be more common in the autumn than at any other period of the year —though its especial prevalence at that time of year is doubtful—it has been called Roseola autumnalis. It is a disease of no importance, and may be unaccompanied by any general or internal local derangement—though occasionally there is a little febrile disturbance, or some dyspepsia. It rarely lasts more than a week or ten days. On the lower extremities, and sometimes on other parts, we observe several rose-coloured rings, varying in diameter from a quarter of an inch to an inch. The colour of the skin within the rings is quite natural. There is no elevation of the discoloured part. The rose-red colour is the only deviation of the skin from its healthy state. You will see, as we proceed, that several diseases of the skin have the same tendency to affect a ring-shape, the part within the ring being, in all respects, healthy. This form of Roseola is Roseola annulata. Like Roseola autumnalis, it is usually accompanied by a little febrile disturbance, and runs its course in a few days. Now and then, however, it is a chronic disease, lasting for many weeks.

A warm bath or two—rest—simple diet—and a single dose of mercurial at bed-time, followed by a mild saline alkaline aperient the following morning, is usually all that is required in the treatment of a case of roseola. If the patient be an infant, you should not forget to examine the condition of its gums, as Roseola infantilis is sometimes the consequence of painful dentition. Should the gums be hot and swollen they ought to be scarified. In the chronic form of Roseola annulata the digestive organs are commonly much deranged. and the patient more or less generally out of health. Change of air —mild tonics, such as the mineral acids—and sea-bathing—are the best remedies. At the same time you must be careful to regulate the patient's diet. As the dyspepsia is of the atonic form, a glass or two of wine daily is usually of advantage. This disease is sometimes dependent on uterine disturbance; you should, therefore, always inquire into the state of the uterine and vaginal discharges, and, if need be, correct what is amiss in them.

The eruption proper to typhus fever, measles, typhoid fever, and cholera, is, in reality, a roseola, but differs in important particulars from the varieties I have just described to you. The rash of typhus and of measles as much merits the name of roseola as does that which precedes the eruption of small pox. The mulberry rash of typhus fever differs from the other varieties of roseola by its dusky colour and the petechial character of the separate spots as the disease progresses —the exanthem of typhoid fever by the wide separation of its constituent spots from each other, and the papular form of the spots; that of measles by the crescentic arrangement of its spots; the rash of scarlet fever by its punctiform character, its colour, and the extent of surface covered; that of cholera by the size and irregular form of its spots and their tint. All are distinguished by their course, and by the constitutional disturbance which precedes and accompanies them.

It is a fact worthy of remembrance, that I have twice known the dusky roseola of secondary syphilis mistaken for the mulberry rash of typhus fever. It can, in some cases, be distinguished only by the general symptoms and by its course; the rash of the two being, at a certain stage and in rare cases, identical in appearance.—*Med. Times and Gazette, Jan.* 3 *ana Feb.* 7, 1857, *pp.* 1, 131.

110.—*Treatment of Favus.* By Dr. Fuller, St. George's Hospital.—Whilst recording the varieties of practice adopted at our London Hospitals, we would call attention to the means employed by Dr. Fuller for the cure of scald-head. It is extremely simple, and in Dr. Fuller's opinion, exceeds in efficacy any of the expedients ordinarily resorted to for the cure of this troublesome disease. It consists in the thorough ablution of the head twice-a-day, by means of soft soap, and the subsequent inunction of an application, composed of equal parts of the unguentum hydrargyri ammonio chloridi, and the unguentum picis liquidæ. The treatment is preceded by a large bread poultice over the entire scalp, to facilitate the removal of the adherent yellow scabs. This is rarely repeated—soft soap is then *rubbed in dry*, and is as often washed off. After the head has been thus cleansed and dried, the ointment is rubbed in for the space of five minutes, and is then smeared over the head, where it is allowed to remain until the evening, when the same process is had recourse to. When this treatment is adopted early, Dr. Fuller states that a cure is usually effected in the course of a fortnight or three weeks—sometimes within a shorter period—and even in old-standing obstinate cases, is rarely delayed beyond a month or five weeks. Further, he states that unless the hair be very thick, it is not necessary to cut it off, though of course such a proceeding facilitates the carrying out of the measures on which the cure depends. We may refer to two patients recently under his care at the hospital in exemplification of its speedy action. The one, a child, aged four years, had been suffering eight days before the treatment was commenced, and all the symptoms had disappeared by the expiration of a fortnight: the other, a child, seven years of age, had been affected above three weeks, and was cured within a month after the first application of the remedies. In the first instance the hair was not cut off, and the mother declared that the ablution and inunction at once "killed the disease" whenever it made its appearance—an assertion borne out by the speedy cessation of the symptoms: in the other, the hair was taken off by the scissors, and the usual course pursued. In common with other practitioners, Dr. Fuller administers tonics and ferruginous medicines internally, under the belief that the Achorion Schönleinii, with which the disease is intimately connected, finds its most congenial nidus in children who are languid and out of health; but he trusts entirely to the local measures for effecting a cure of the local disease.—*Med. Times and Gazette, March* 14, 1857, *p.* 263.

111.—*Treatment of Itch.*—M. **Fischer** strongly recommends for this purpose, instead of the sulphur ointment, the employment of a lotion consisting of caustic potass 1, distilled water 12 parts.—*Med. Times and Gazette, Jan.* 24, 1857, *p.* 94.

112.—ON THE PREVENTION OF PITTING IN SMALL-POX.

By Dr. **Alexander Roward**, Quebec.

[A strong well-built man was admitted into hospital on April 23rd, 1856; in three days an eruption of confluent small-pox made its appearance. Dr. Roward says]

Three days after the eruption presented itself I applied a solution of nitrate of silver all over the face, of the strength of one drachm of the salt to an ounce of water, which was much stronger than I had heard of having ever been employed before. This was done with the view of preventing "pitting," which appeared inevitable from the severity of the disease, and its tendency to confluence. For in addition to high fever and constitutional excitement, the cutaneous inflammation ran a severe course, in some parts assuming an erysipelatous character, terminating in subcutaneous abscesses.

The patient experienced a grateful sense of cooling from the application, which also relieved the distressing itching and tension from which he suffered; and he begged earnestly to have the wash again applied. The practice was pursued daily till the 13th of May, when it was discontinued. The blackened cuticle now began to peel off, leaving the face perfectly free from pitting, while the hands, in which the disease had been purposely allowed to follow its course, were deeply and numerously scarred.

Other striking beneficial effects were observed to follow the use of this strong solution besides the prevention of pitting. The inflammation about the face and head became diminished, and the itching and heat were lessened, while the application caused no pain, gave rise to no disagreeable odour, and was not followed by any secondary fever. The patient recovered completely from the disease, and is now a servant in the hospital.

In addition to the above advantage, I believe an important step is attained towards the patient's safety by so materially diminishing the intense inflammatory action about the head and in such close proximity to the brain; and I am so strongly impressed with its utility in this respect, that I shall apply it not only to the face, but all over the scalp, in all future cases.

Having every reason to be gratified with the result of treatment in the foregoing case, I mentioned the circumstance to my friend Captain Reeve, the Commandant at Grosse Isle Quarantine Station, and strongly urged him to recommend a trial of the same plan in the Quarantine Hospital when an opportunity should occur. He did so, and it was accordingly tested in four cases during the following months of June and July, with the most satisfactory results.

These cases have been reported in the October number of the 'Montreal Medical Chronicle,' by Dr. Von Iffland, Assistant Physician at Grosse Isle; and I have received letters from that gentleman and from Captain Reeve and Dr. G. Douglas, the Medical Superintendent of the Station, acknowledging that it was from me they obtained the first idea as to the utility of a strong solution of nitrate of silver, in the ectrotic treatment of small-pox.

I am well aware that weak solutions of the same salt have been recommended, but from their weakness they proved irritating and inefficient, and have consequently been abandoned. The solid stick of caustic has been applied to each punctured vesicle; but this process was found to be painful and tedious, and in confluent cases almost impracticable. None of these objections apply to the strong solution of one drachm to the ounce of water. Its application is free from pain, it has been proved to be highly efficacious, and its employment can be entrusted to a common nurse or attendant on the patient.

Moreover, I would recommend its application to the mouth and fauces. I do not, however, recommend its application to the cornea when attacked with the small-pox pustule, as that organ demands special and separate treatment from the surgeon.—*Med. Times and Gazette, Dec.* 13, 1857, *p.* 591.

113.—*On the Prevention of Pitting in Small-Pox.* By John Higginbottom, Esq., Nottingham.—[Mr. Higginbottom, in his 'Observations on the Use of Nitrate of Silver,' published in 1850, advocates the use of nitrate of silver to prevent the pitting of small-pox. The following are extracts from his work :]

Page 25, of Variola.

"If the eruption be distinct, the solid stick of the nitrate of silver should be applied on each pustule, previously moistened with a little water. If confluent, the concentrated solution must be applied over the whole surface, as directed in erysipelas, and, if necessary, to the whole of the scalp, (the hair being previously removed,) and to the ears, the neck, or any other part where it may be thought necessary. The application should be used on the second or third day of the eruption. If any part should be untouched on the succeeding visit, it must be applied to those parts."

Page 36.—In preventing the pitting of small-pox :—

"Having observed some years ago, that the nitrate of silver had been used on the Continent by MM. Delpeau, Bretonneau, and Serres, for the purpose of preventing pits and scars consequent on small-pox, I was induced to apply it as they directed, by puncturing the centre of each vesicle with a needle, and then applying the solid stick of the nitrate of silver. I found it effectual in preventing any further progress of the pox. The next patient on whom I used the nitrate of silver was a strong, healthy young man, about twenty years of age, with confluent small-pox. I punctured a few of the vesicles on the face, but these being very numerous, I satisfied myself with applying the *concentrated* solution over the whole surface of the face where they were most confluent, without making any punctures.

"The solution answered as well as where the punctures had been made, in arresting the progress of the eruption.

"The next case of confluent small-pox was one where no punctures were made,—Mr. P., a young man, of nineteen years of age, and of delicate constitution. From the confluent state of the pox, I should have expected deep pits and scars on his face. I applied the concentrated solution on the whole of the face and the ears, in the same manner as recommended in erysipelas.

"The vesicles of the pox were immediately arrested in their progress, and in four days presented small hardened eschars free from inflammation, while the pustules on the body were gradually proceeding to suppuration. In about nine days the eschar had come away from the face without leaving pits.

"In this case the nitrate of silver not only prevented the pits, but the inflammation, irritation, and offensive suppuration which are so distressing to the patient.

"If thought necessary, the nitrate of silver might be applied all over the scalp, as in erysipelas, to prevent cerebral inflammation.

"It might be applied on and within the cavity of the ear, to prevent otitis, and on the conjunctiva, to prevent ophthalmia.

"I have used as a gargle to the throat, in small-pox, with great benefit, a solution of a scruple of the nitrate of silver, in three ounces of distilled water.

"It appears that MM. Delpeau, Bretonneau, and Serres used the solution of the nitrate of silver over the whole surface of the small-pox, 'but it was found that, employed in this manner, the salt was utterly useless; that it masked the progress of the eruption from sight, without impeding its development.'"

The failure must have arisen from using *too weak a solution*. I avail myself of this opportunity to say that the daily practice of more than half a century has confirmed me in the opinion of the great value of the nitrate of silver in the cure of inflammation, wounds, and ulcers. —*Med. Times and Gazette, Jan.* 24, 1857, *p.* 96.

114.—*On the Prevention of Pitting in Small-Pox.* By JAMES STARTIN, Esq. Surgeon to the Hospital for Diseases of the Skin.—[Mr. Startin states that he has found the following plan uniformly successful in many cases in which he has adopted it.]

The plan consists in applying the acetum cantharidis (P.L.) or any vesicating fluid, by means of a camel-hair brush to the apex of each spot or pustule of the disease, on all the exposed surfaces of the body, until blistering is evidenced by the whiteness of the skin in the parts subjected to the application, when the fluid producing it is to be washed off with water or thin arrow-root gruel.

The vesication for each pustule should not be larger than the eighth or sixth of an inch in diameter, leaving intact the boundaries of the inflammation, excepting where the malady has become confluent, when the entire surface so affected should be vesicated.

With respect to the best period of the eruption of small-pox for making this application, although between the fourth and eighth days should be preferred, the vesication has seemed to me to have been efficacious whenever it has been practised before the slough has formed, evidenced by the secretion of pus, which slough is at once the cause of the pitting, and the peculiar characteristic of this formidable malady.

The only after-treatment in these cases consists in puncturing the blisters with a needle, in keeping the affected skin clean by means of arrow-root or rice gruel (avoiding soap of every kind), and in bathing the eruption several times a day by the aid of soft sponge or linen wetted with the following lotion :—

℞. Sodæ biboracis, ℈j.; ammoniæ sesquicarbonatis, ℈j.; acidi hydrocyanici diluti, ʒj.; glycerini destillati, ℥ss.; aquæ rosæ ad ℥viij. M. Ft. lotio.

The pain attending the application of the vesicating fluid is very slight and transient, disappearing almost simultaneously with the ablutions recommended, nor does the blistering add much to the disfigurement, while it relieves the pyrexia and cerebral symptoms, should they be present. The *rationale* of the benefits arising from the method appears to me to be comprised in John Hunter's observation, that "if you can succeed in changing the character of an inflammation, you will often succeed in curing a specific disease;" which he calls "the mode of cure by an irritation different from the disease;" for he holds elsewhere, that "no one disease can have two distinct and different critical inflammations."—*Med. Times and Gazette, Feb.* 21, 1857, *p.* 198.

115.–CONDYLOMA: ITS PATHOLOGY AND TREATMENT.

By Dr. J. D. Gillespie, Surgeon to the Royal Infirmary, Edinburgh.

[Dr. Gillespie applies the name of condyloma to all those more or less rounded elevations of the skin, so frequently met with on the genital organs, or in their neighbourhood, in the course of venereal diseases, but which are also occasionally observed where no disease of a venereal character exists.]

These excrescences may be solitary or clustered together, either dry, or moist, secreting a sero-mucous or muco-purulent fluid, and are almost invariably situated, or may be traced to have commenced, where there is friction between opposing surfaces—as the labia majora in the female, the root of the penis and scrotum in the male, the folds of the nates, the perineum, and anus, in either sex.

[Dr. Gillespie then proceeds to mention the *characteristics* of condyloma, as it occurs *on the external surface*; and then proceeds to the form which it assumes *in the mouth*, an appearance which may be termed the secondary result.]

Dr. Adams, in his work on morbid poisons, has given a good general idea of the affection; but his description includes also warts, which are now almost universally considered as purely accidental in their origin, resulting merely from local irritation.

Dr. Adams remarks as follows:—

"There are a number of soft excrescences about the anus, to which various names have been given. They arise sometimes in consequence of a discharge from the rectum, stimulating the neighbouring parts to ulceration. If such ulcers are prevented from healing by the discharge continuing, or by the friction of the parts, they must either ulcerate deeper and wider, or the cuticle will send out processes to defend them. These, in consequence of the pressure they receive, grow in various shapes, from which they have acquired their names. They will arise from a venereal origin in two ways. If a secondary ulcer is seated in these parts, that ulcer, having no power of healing itself, will take the character above described, from the nature of the parts. Sometimes also the matter of gonorrhœa, by falling from the vagina along the perineum, will produce ulceration, and the same consequences follow. In either of these cases, the remedy which cures the first disease will cure these local complaints, or if they afterwards remain, they will no longer retain their syphilitic property, and may readily be cured by topical remedies."

Without subscribing to the views entertained by Dr. Adams, with regard to gonorrhœa and syphilis, I consider his description of the various modes of condyloma first presenting itself, as accurate and worthy of confidence.

[Mr. Johnstone is the only person who, so far as Dr. Gillespie is aware, has attempted to classify varieties of condyloma. In the 'Med.-Chirurg. Review' for 1834 he describes three varieties—the non-ulcerated, ulcerated, and condylomatous tumour.]

Condylomata, resulting from non-venereal discharges, do not differ in any respect from those occurring in connection with gonorrhœa. Occasionally, however, those met with in the course of syphilis have more hardened bases, and more conical tops. As regards secondary symptoms in non-ulcerated condyloma, I believe them to consist merely of the affection of the mucous membrane of the mouth, except in those cases where the condyloma directly results from syphilitic sores, when, of course, other secondary results may co-exist.

Various authors have stated that condylomata may be observed in unusual situations, such as in the axilla, at the umbilicus, and between the toes. Unfortunately, however, they do not give any description of the disease in those situations, nor of the causes of its production; but, I can readily believe, that irritating discharges or secretions in these localities, if neglected, may lead to such a result, for two of the most essential exciting causes of the disease will be present—acrid discharge and friction. Though I cannot recall any particular case, I believe I have, in the course of practice, occasionally seen appearances closely resembling condyloma in the axilla, when neglected discharges from abscesses have been allowed to accumulate undisturbed. I have either once or twice observed the umbilicus affected.

The ulcerated condyloma is merely an advanced stage of the former, and differs chiefly in the fact, that the secreted fluid is purulent or muco-purulent. The ulcerations, though extensive, are very rarely deep; and though they may in some measure destroy the characteristic appearance of condyloma, they will be found to have a flat raised indurated base. This variety Mr. Johnstone considers to be always consequent on venereal taint, and to be frequently followed by secondary symptoms.

Indicating, as it does, a longer continuance and a severer form of the disease, we may naturally expect the secondary affections attributed to condyloma, more frequently to ensue, but I deny that this variety of condyloma is always the result of venereal disease. If Mr. Johnstone admits the first variety occasionally to be non-venereal, he may surely entertain the possibility, or rather certainty of the disease, when protracted, assuming an ulcerative action, without attributing such an occurrence to a venereal source.

This is the kind most frequently met with in the Lock Hospital, Edinburgh.

The condylomatous tumour is generally an aggregation of condylomata, at certain places favouring their development, and, as it increases in size, merges more into a warty character. On the opposing surfaces of the nates around the anus, I have seen it most frequently, where it often is caused by long continued discharge from fissures in that situation. In the perineum, a little below the fourchette, in females, I have also often noticed it, having the appearance of a vascular wart, with condylomatous surfaces, opposed to condylomatous tubercles on the opposite thighs.

I now come to the secondary appearances observed in condyloma. The most common, and almost diagnostic indication, is a peculiar huskiness of the voice. This has been noticed by Dr. Skae, even in cases where no morbid appearances were recognised in the fauces.

Next in frequency is the development of white patchy elevations on the mucous membrane of the mouth. These are situated at the angles of the mouth, on the inner surface of the lips, on the palate, tonsils, or tongue: in fact, no part of the interior of the mouth is exempted.

In my experience, the tonsils and soft palate have most frequently been observed to be affected. The whitish appearance has been variously described, but it more closely resembles the surface of a mucous membrane, touched by nitrate of silver, than any other to which it has been compared. Whether these patchy elevations on the fauces are always in consequence of ulceration, I am not prepared to say, for occasionally the appearance presented is that of deposit on the surface rather than loss of substance.

Mr. Johnstone describes them as ulcerations, but as always very superficial; Dr. Wallace, again, considered them as rather resulting from abnormal deposits.

The next secondary affections to which allusion has been made by authors, are eruptions on the skin. Mr. Johnstone mentions four varieties.

1st. The exanthematous efflorescence or stain.

2d. Psoriasis discreta.

3d. Lepra.

4th. Desquamating tubercle.

As Mr. Johnstone does not state whether these eruptions occurred in any cases of condyloma resulting from a non-syphilitic source, we are not entitled to assume that condyloma, untainted by syphilis, can produce such eruptions. Dr. Wallace's views were certainly in favour of this possibility; but, we must recollect, that condyloma itself was by him considered always to form one of his exanthematous group of syphilitic eruptions. Dr. Skae's observations coincide with mine, as to the infrequency of eruptions in connection with condyloma. In the 36 cases of condyloma noted by him, one or two had the red brown stain, one clustered lichen, one rupia, and one psoriasis venerea. I have no doubt these isolated cases occurred in patients labouring under syphilis, with condyloma as an accidental complication.

In the present state of my knowledge of condyloma, I am not prepared to admit that any eruption can be strictly ascribed to the morbid influence of condyloma, and where it occurs, I believe it may be always traced to a purely syphilitic source. If no syphilitic affection can be made out, I think we may, without impropriety, ascribe the eruption, which I have always noted to be of a mild description, to a previously acquired syphilitic taint, for such eruptions are liable to recur, should their reappearance be invited by such a cause of irritation as we may presume condyloma to be.

Treatment of Condyloma—If we have to deal with the condylomatous tumour, extirpation by the knife or scissors, with subsequent escharotics, should be adopted.

In the flatter varieties, the first indication is removal of the exciting cause. If gonorrhœa or leucorrhœa be present, the treatment for such diseases must be had recourse to; and strict cleanliness be enjoined. It generally happens, when females are the patients, that the discharge is encrusted on the surface of the parts affected, or there is too much irritation present, that poultices for a day or two should be employed. Thereafter I have found the sulphate of copper the most effective remedy, at first in strong solution, but, of course, modified according to the nature of the case, and, latterly, the solid crystal, which should be employed for some time after the apparent cure, as the disease is apt to recur. For the affection of the throat, the sulphate of copper gargle answers admirably; occasionally, the internal administration of iodide of potassium seems to accelerate the cure of the secondary affection. Under this simple treatment, all the cases of condyloma I have seen have easily got well.

When syphilis was also present, a mild mercurial course was sometimes necessary for other symptoms, but I never have had to administer a grain of mercury for the cure of the condylomatous affection, whether complicated with syphilis or not.

That mercury may occasionally produce the appearances in the mouth, which have been observed in connection with condyloma, I have already stated, and I do not think its importance has been sufficiently pointed out.

Dr. Abraham Colles of Dublin, has made the same assertion. He also says, that a superficial ulceration or excoriation about the anus, is very constantly present. The affection of the mouth he does not consider benefitted by mercury in any shape, but the nitrate of silver or sulphate of copper is the best remedy. In the face of this, he narrates the case of a gentleman, who had taken mercury for a chancre, six weeks previously, who had on the site of the chancre a species of condylomatous sore, red, moist, and hard; on the lower lip, a circular patch very superficially ulcerated, of a milky white colour, the tonsils and tongue presenting the same appearance. For sixteen months was this gentleman subjected to an almost continuous course of mercury, at one time spitting four pints daily, and all on account of this disease in the mouth, for the sore soon healed. In the course of the treatment, a superficial ulceration at the verge of the anus appeared. At the end of sixteen months, this unfortunate party went to the country as bad as ever, applied merely local remedies, and returned in the course of a short time cured. It never seems to have occurred to Dr. Colles, that instead of curing he was feeding the disease by these repeated salivations, for not a word escapes him as to the pernicious course of treatment he had adopted, and I trust it will stand, in all its simplicity, a warning to those who are injudiciously inclined to pour in repeated mercurial courses for the cure of such morbid conditions.

While taking charge of the Lock Hospital, an eminent teacher of surgery in this country, who has written, by the way, a voluminous surgical work, in which I have looked in vain for any notice of condyloma, came to visit the wards; I showed him some cases of simple condyloma, resulting from gonorrhœa, and asked his treatment. He said he would give mercury, and they would be cured in the course of a fortnight or three weeks. I could have shown him these very patients convalescent, in a shorter time, under mere soap and water, with occasional touches of the sulphate of copper.

I have no horror of mercury, I have frequently been obliged to administer it in syphilitic affections, but I object strongly to the use of this active mineral, unless it actually be required; and I trust I have said enough to show, that in the treatment of condyloma, emanating from whatever source it may, mercury is both useless and unjustifiable.—*Edinb. Med. Journal, Jan. and Feb.* 1857, *pp.* 585, 681.

116.—ON A SOLUTION OF CHROMIC ACID, AS AN ESCHAROTIC IN WARTS AND OTHER GROWTHS UPON THE GENITAL ORGANS.

By John Marshall, Esq., Surgeon to University College Hospital.

[Mr. Marshall directs our attention to the use of a solution of Chromic acid in distilled water as a stimulant escharotic in the treatment of warts of the genital organs, whether resulting from syphilis or from gonorrhœal, or other irritating discharges.]

Case 1.—[A young girl, the subject of syphilis for the previous eleven months, applied to Mr. Marshall to be relieved of numerous warts situated about the margins of the vaginal and anal apertures.]

There were nearly thirty separate growths, some pedunculated, some sessile, some deep-red and highly vascular, others paler and covered with a thick epidermoid covering, but all exquisitely tender. Nitrate of silver, the acid nitrate of mercury, nitric acid, and nitric with arsenious acid, were applied at different times. Acetic acid and creosote had already been used. The mixed nitric and arsenious acids produced the most effect, but the pain and suffering caused by their application were so intense that the patient would not submit to the necessary repetition of the remedy. Under the influence of chloroform nearly all the warts were then snipped off with scissors, and nitrate of silver was freely applied. During this varied local treatment, which occupied about a month, the cutaneous eruptions and sore-throat quite disappeared, under the use of small doses of iodide of mercury. But the troublesome verrucæ were only temporarily suppressed. At the end of a fortnight they had reappeared, and the patient absolutely refused to submit to any further treatment by caustics or excision, even if chloroform were again employed, as the pain after the last operation had been so severe. For the next four or five weeks burnt alum and lead lotion were applied, and at the same time the constitutional treatment was omitted. The cutaneous eruption did not return, but the warty growths became as large and painful as ever.

Finding it useless to recommend a recurrence to remedies already too familiar to the sufferer, and endeavouring to devise some further means of treatment, Mr. Marshall first conceived the idea of trying the effect of chromic acid, and, after using much persuasion, was allowed to touch with it a single warty growth. For this purpose, a small quantity of crystallized acid was exposed to the air until it had completely deliquified, and then an equal bulk of water was added to it. When a drop of this very concentrated solution was applied to the condemned wart, instant deoxidation of the acid ensued, and the growth became covered with a blackish-brown, lustrous film of oxide of chromium. Very little pain was produced, but a drop of water being now applied, on the supposition that further dilution was necessary to enable the remedy to penetrate the substance of the wart, a smarting sensation followed, which lasted a few minutes. No further inconvenience ensued, and in four days this particular wart had disappeared. A second trial was then made on four larger masses, with a weaker solution of chromic acid. The acid was not deoxidated in the same way as before; but the growths were stained of a bright orange-yellow colour. A little more pain, smarting, and heat were produced, but these were transient and tolerable, and at the end of a week, after some little soreness and discharge, the parts touched had wasted down to slightly elevated indurations. On the third occasion, the patient's confidence being established, and her fears of pain relieved, all the remaining warts on the vulva, perinæum, and anus were freely touched. The surfaces implicated being now extensive, the pain was more severe, and was felt for three or four hours ; but still it was not to be compared in severity with that caused by the caustics previously employed. On the next day, the parts became somewhat inflamed, hot, slightly swollen, covered with a thin discharge, and rather sore, painfully so on movement or pressure ; but none of the symptoms were of an aggravated character, and on the fourth day had almost entirely subsided. By the end of another week, every warty growth had disappeared. Throughout the whole treatment by chromic acid, free ablution of the parts after the first twenty-four hours, and a dressing of dry lint, twice daily, were enjoined. No constitutional treatment was pursued. At the present date, two months have passed over without any re-appearance of the disease. It may be well to mention that there was no irritation of the inguinal glands consequent on the inflammatory action set up by the chromic acid, nor were there any symptoms of disturbance in the general health which could be referred to the absorption of the chromic acid into the system. On the contrary the health improved.

Additional cases could be readily quoted ; but the only new fact of practical value which they show is, that the use of the common lead lotion, commencing the morning after the chromic acid solution has been applied, restrains the subsequent inflammatory action, relieves the accompanying soreness, and does not in any way neutralize or retard the rapid effect of this apparently useful escharotic.

The following general remarks, derived from information supplied to us by Mr. Marshall, may complete our present notice of this remedy, and will enable our readers to test its efficacy :—

The chromic acid employed by Mr. Marshall was prepared from the chromate of potash and sulphuric acid. Definite proportions of the crystallized acid were dissolved in distilled water, and the slight trace of sulphuric acid present was precipitated by a drop or two of a solution of bichromate of baryta; but this extreme care to attain a pure solution was found by comparative trials to be practically unnecessary, although considered desirable in a first series of experiments. The strength of the solution ultimately adopted was in the proportion of 100 grains of crystallized chromic acid to a fluid ounce of distilled water.

The acid solution is best applied by aid of a pointed glass rod, or, where a large quantity is needed, by means of a small glass tube drawn to a point. Only so much should be applied as will saturate the diseased growth, avoiding the surrounding healthy mucous membrane; for although the solution is not sufficiently powerful as an escharotic to destroy or even vesicate the mucous membrane, it may give rise to an unnecessary amount of subsequent inflammatory action, which of course it is well to avoid, but from which no serious consequences have been found to ensue. Any superfluous acid may be removed by a piece of wet lint. The first effect of its application to the warts is to produce a slight smarting pain. If, however, any ulcerated surface be touched, the pain is of a burning character, more lasting, but not so acute and intolerable as that caused by the nitrate of silver, or by nitric acid with or without arsenious acid. After a short time the pain passes off, but there is gradually established a certain aching and soreness, dependent on the excitement of more or less inflammation in the parts. This inflammatory action is accompanied by a purulent discharge, and under its influence the morbid growths rapidly waste, in some cases being thrown off altogether, and in others undergoing a partial though evident diminution in size. The best immediate dressing to the parts is dry lint, as that does not dilute the strength of the chromic acid solution, and is at the same time clean. Afterwards the lint should be changed twice daily, or, what appears to be better as a check to any inflammation, the parts may be washed with a solution of lead, and dressed with lint moistened in the same.

In most cases of warts, one application suffices, the cure being completed in from four to eight days. The extreme period to which the inflammation set up by the chromic acid has been found to continue active is about four days. In severe cases, where the warts are large, repeated applications are necessary, each being followed by less inconvenience, and less of the characteristic inflammatory action. In but one instance, as far as hitherto observed, have more than three applications been required, and in that there was great neglect as to proper cleanliness and dressing. It remains to be seen whether warts consequent on syphilis are quite as manageable as those clearly of non-syphilitic origin.

On the whole, it may be said that the treatment of these troublesome and painful growths by chromic acid appears more certain and speedy than that by the caustics usually employed, whilst the pain caused by it is not so severe, and the subsequent soreness, under proper management, is, after all, a comparatively small inconvenience.

With the results of further trials of chromic acid as an escharotic in other affections, as, for example, primary chancre, vascular growths of the female urethra, ulcers of the cervix uteri, common ulcers, sinuses, fistulæ, &c., Mr. Marshall promises to supply us, with as little delay as is consistent with correct observation. We must not omit to mention, however, a trifling fact, but one nevertheless of practical advantage; it is, that the chromic acid solution neither burns nor stains linen: it all washes out.—*Lancet, Jan.* 24, 1857, *p.* 88.

117.—ON THE TREATMENT OF ULCERS OF THE LEG, WITHOUT REST.

By Thomas Hunt, Esq., Surgeon to the Western Dispensary for Diseases of the Skin. (Read before the Medical Society of London.)

[Ulcers of the leg occur most frequently in labouring women who have borne children. By rest in the recumbent position they for the most part heal readily; but, unfortunately, often break out again when the person returns to usual duty. Of the character of these ulcers Mr. Hunt says]

The lower extremity is subject to three kinds of ulcer—the strumous, the syphilitic, and the venous or varicose. There are other kinds, but they are far less common. The *strumous* ulcer occurs frequently in children and young persons: rarely in the mature or aged. Its character is that of suppurative inflammation, terminating in a languid looking sore on a livid ground, frequently presenting tumid and flabby granulations. The syphilitic ulcer of the leg is always secondary or tertiary, and will break out afresh years after all suspicion of the affection of lues has gone by. It is a deep irregular sore, surrounded by a reddish brown blush, and often burrowing under the dermis, sometimes leaving between two sores a band or bridge of copper-coloured integument, which overlies a slough. Mercury is the remedy for this kind of sore; and cod-liver oil is the best remedy for the strumous sore. But I merely allude to these specific ulcers in order that I may not be supposed to confound them with, or include them in, my description of the *chronic venous*, or *varicose ulcer of the leg*. This latter is a purely local affection, and depends in every instance upon some interruption in the venous circulation. From some imperfection or inaction of the valves, the venous blood is thrown back upon the capillaries, the nutrient process is vitiated, and an ulcer results. The varicose state of the veins is often seen in the prodigious distention and serpentine course and thickened investments of the external veins of the leg, and sometimes of the thigh. In other cases, it is not observable externally; but the disease still appears to arise from interrupted circulation, probably in the deep-seated veins. The ulcer may vary a good deal (in different cases) in extent, in depth, and in character. It may be as small as a split-pea, or it may extend all round the leg, or even occupy one-half or three-fourths of the entire limb: it may be superficial and cutaneous, or it may extend to the bone: it may be phagedenic and gangrenous, or inflammatory and irritable, or indolent and stationary; but it is always deficient in granulations, and more or less unhealthy. It is frequently surrounded by a feeble or disorganised dermis, assuming the form of a scaly, papular, erythematous, or vesicular eruption; or the limb may in one case be wasted and scarred; in another, swollen, hypertrophied, or œdematous; and in a third, the cellular membrane may be infiltrated with adhesive exudation, and the joint more or less anchylosed. The constitutional disturbance varies with the character of the ulcer. The system is often severely affected when there is active phagedena or an extensive destruction of parts; or when, as often happens, the pain is so severe as to disturb or destroy the patient's rest: but, in the majority of cases, the general health is very good, and the disease has the character of a local affection arising from local causes. Indeed, many patients believe that the ulcer is salutary, and that it could not be healed without the risk of damage to the general health. And it is well if the practitioner does not in some degree sanction, silently or otherwise, this unfounded, and now nearly obsolete prejudice.

Constitutional Treatment.—When the ulcer is connected with well marked disease of the surrounding skin, the case may require alterative treatment; and if acute inflammation be present, leeches and purgatives; when it is sloughy or gangrenous, tonics and stimulants may be necessary; but when the health is good, and there is no strumous or syphilitic taint, internal medical treatment is rarely required for the healing of the sore, although purgatives may be necessary afterwards; and if the discharge has been copious, and the ulcer of long standing, it is a safe and useful plan to accompany the surgical treatment with a course of moderately active purgatives or diuretics.

Surgical Treatment.—I may assume that the fellows of the society are all well acquainted with the plans of treatment proposed severally by Messrs. Whately, Baynton, Scott, Spender, and many other writers of more recent date. These are all founded on the simple principle of giving due artificial support to the limb, by the application of plaster or bandages; the practice of each differing only in unimportant details—Mr. Whately dressing the ulcers with pledgets of cerate; Mr. Baynton and Mr. Scott using adhesive plaster; and Mr. Spender chalk dressing. In the hands of all these surgeons, I do not hesitate to say that equable pressure is the chief agent in the cure; and the extraordinary success attending the practice of each one consisted mainly in the skill and adroitness, attained only by long practice, in applying the bandage or plaster so as to make it press equally on every portion of the irregular surface of the limb. The usual hospital practice is the same in principle. The German poultice is a convenient dressing; and while by the recumbent posture the vessels are relieved of the distention occasioned by the gravitating fluids, the atmospheric pressure on the limb itself forms a sufficiently powerful, as well as an elastic bandage, affording a constant and equable pressure on every portion of the surface. It is not necessary that I should comment on the very ingenious device introduced by Mr. Gay, consisting of an incision into the integuments surrounding the ulcer, where the healing process is prevented by the tight and contracted condition of the neighbouring skin. To this I have no objection to offer; but it does not apply to the great majority of cases under consideration, if, indeed, to any of them.

Modern surgery, therefore, is competent to the treatment of ulcerative diseases of the leg. There is, I believe, no essential defect in it, no necessity for anything new. Why then is it so notoriously unsuccessful? Mainly because the application of a bandage is looked upon as an easy and simple operation, which may safely be intrusted to the patient, the nurse, or the dresser; whereas I know of few operations in surgery more difficult to perform, or requiring more painstaking practice, than the application of a bandage to the human leg in such a manner as that every portion of the limb, from the toes to the knees (including especially the hollow between the heel and the inner and outer malleolus) shall receive equal and abiding support. In the careless manner in which a bandage is commonly applied, it often does more harm than good. If it be at all tighter round the leg, for instance, than round the foot, the foot and ankle will become swollen and œdematous; and on removing the bandage there will be seen deep fissures where one edge of the bandage has been unduly tight, and a puffiness in other parts, which adds to the interruption of the circulation. And it is extremely difficult wholly to avoid this unequal pressure. There are also other impediments to success; and at the risk of being tediously minute, I must beg attention to several important details.

First, the *dressing* of the ulcer is a point of little moment as regards the ultimate success of the bandage; but time will be gained by a proper dressing, the treatment will be more speedily successful, and the patient will have much less to suffer. Certainly there is no dressing which deserves the name of a panacea. The appearance of the ulcer, not very easily described, always suggests to the practised eye what will best suit it.

Offensive ulcers, especially if they are disposed to gangrene, are easily and readily convertible into healthy sores, by simply filling them with a powder consisting of equal parts of finely pulverised vegetable charcoal and prepared chalk. Over this a poultice may be applied if the sore be very irritable; but it is generally sufficient to apply over the charcoal a piece of dry lint and bandage. On dressing it the next day, the wound is seldom offensive; and on the third or fourth day, if the patient's health be duly attended to, it is commonly converted into a healthy looking sore.

Very painful and irritable ulcers, disinclined to heal, I usually dress with a dossil of lint dipped in chloric ether, and then apply the bandage. This gives severe pain for a few minutes, but the patient will get a good night's rest, and never objects to its repetition.

Sanious ulcers, having no defined edge or depth, require a free application of nitrate of silver or a solution of sulphate of copper, as also do those sores in which the granulations are excessive.

Sluggish ulcers, covered with a tenacious yellow coat of muco-pus, are often roused into healthy action by the application of a little finely powdered nitric oxide of mercury, or an ointment of the same material—two drachms to the ounce.

Ulcers with hardened cartilaginous edges require severe pressure. A dossil of dry lint should be applied to the surface of the sore, and then the edges of the ulcer should be very tightly drawn together with strips of adhesive plaster; over this should be laid a piece of tow or wadding, and the whole supported by a flannel bandage applied as tightly as possible. Under this treatment, the absorbents are awakened into activity, and the sore becomes very manageable.

Sores of the more *ordinary character* I generally fill with dossils of soft dry lint, placing over this a pledget of spermaceti ointment, and a bandage applied with gradually increasing tightness, *i. e.*, more and more tightly every day.

All these ulcers require daily dressing for the first fortnight or more, until the discharge has nearly ceased; and then forty-eight hours may be allowed to elapse between each dressing. As the granulations arise, they sometimes require a touch with the sulphate of copper, or lint dissolved in the solution.

Bandages.—Calico and linen bandages are generally inefficient, and often useless. They do not yield sufficiently to the motion of the limb; consequently, they cut the leg on one edge, and become loose on the other. The elastic cotton bandage sold at the shops is a very stupid affair. The two edges are stitched together, and form a cord, which cuts the leg if the bandage is tightly applied; and, if not tightly applied, it is useless. If the ulcer is disinclined to heal, a *flannel bandage* is essential to its permanent cure. This bandage should be made of moderately fine Welsh flannel, from seven to eight yards long, according to the size of the limb, without a single joining, and exactly two and a half inches wide. The flannel should not be coarse, for then it is too rigid and rough for the tender skin; neither should it be very fine, otherwise it will fall into folds or become loose. If the breadth be more than two and a half inches, it is impossible that it should lie smoothly about the foot; if less than two and a half inches, the portion enveloping the calf will slip out of place as the patient walks. But, as the flannel shrinks in washing, if the patient have a large leg, two and three-quarter inches may be allowed for new and unwashed flannel to commence with. So long as there is any discharge from the wound, it will be necessary to have a clean bandage daily. The patient should therefore be supplied with two bandages, and be admonished not to have them washed in very hot water, as they will shrink, and become thick and unyielding.

Application of the bandage.—Before applying the bandage, it should be rolled up very tightly and evenly, otherwise it will slip on being applied. The wound being dressed, the patient should sit in one chair, and place the heel on the *corner* of another chair, so as to give room to apply the bandage to the heel. The first turn or two should be taken round the foot close to the little toe, taking care that every turn is even, so that one edge of the flannel does not cut while the other is loose. The next turn should be round the ankle, just as far from the heel as is requisite to lay the bandage even and tight; next round the foot again, nearer the heel than before; then round the point of the heel, and over the instep; then under the foot, and, slantingly inclosing the hollow of the inner malleolus, it should be brought again round the leg, and afterwards round the hollow of the outer malleolus; then round the point of the heel a second time, and round the foot a fourth time; then round the leg, and carried spirally over the calf up to the knee, allowing the bandage to take a turn on itself just as often as it fails to lie even and flat without such a turn. Care should be taken that the bandage is rather tighter round the foot and instep than round the small of the leg and calf. The bandage should reach to the knee, where it should be pinned, not tied, and the stocking should be pulled over it, no garter being allowed on any account. If the patient complains that the bandage *cuts* any where, it should be taken off, and reapplied with additional care. It is very often requisite to apply a compress of tow or cotton wadding to the hollow of the ankle, to secure sufficient pressure there, especially if that be the seat of the ulcer, which often happens.

In the method of applying the bandage recommended in books on surgery, and even by Whately himself, this part is left altogether unsupported, and the pressure is applied to every part of the leg except where it is most wanted. It requires some practice to adjust this matter nicely without putting too many folds round the foot; but it may be done, and is worth the trouble, inasmuch as without it we may fail.

The advantage of a flannel bandage over a cotton one is threefold. First, it is a bad conductor of heat, so that the wound is preserved in a uniform temperature. This is very important. Frequent changes of temperature present a great impediment to granulation. Mr. Crompton, of Manchester, has shown that the great advantage of dressing burns and scalds with flour, wadding, or wool, consists not in excluding the air, as is commonly supposed, but in preserving an equable temperature. Thus I have found ulcers of the leg, in cold weather, heal rapidly under a flannel bandage, which refused to heal under a cotton one. Another advantage of flannel is, that it yields a little (not too much) to the motion of the leg. I have had patients who have walked miles to be dressed, without complaining, with a flannel bandage, who could not endure the pain of standing in a cotton one. Thirdly, the flannel, having a rough surface, adheres to its own folds, and does not slip down the leg. A well applied flannel bandage will keep its place a week, night and day. A cotton or calico bandage will scarcely remain in place an hour.—*British Med. Journal, Jan.* 3, 1857, *p.* 4.

118.—*Local Application in Erysipelas.*—Dr. Livezey observes that he has tried comparatively all the local applications usually recommended in erysipelas; and that while finding none of them infallible, he believes the tincture of iodine to be the most reliable. It should be preceded by an emetico-cathartic, especially in the frequently occurring bilious cases, and should be followed by the tr. ferri mur. The latter, regarded by some as a specific, is so in his opinion, only after the bilious and highly inflammatory symptoms are removed, when quinine is just as useful. Dr. Livezey, however, wishes to recommend to notice a strong, saturated tinct. lobeliæ, applied frequently by saturating muslin, or fine linen cloths, and which he believes will prove more satisfactory than any other application.—*Boston Journal.—Med. Times and Gazette, March* 14, 1857, *p.* 269.

119.—*Creosote in Erysipelas.*—Dr. Delarue strongly recommends the following application in erysipelas, which he believes exerts even a specific effect upon the disease :—Creosote eight parts, lard thirty parts, to be applied to the parts every two hours.—*Med. Times and Gazette, April* 4, 1857, *p.* 344.

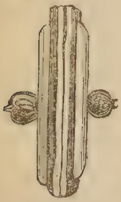
120.—*Chilblains and Chaps.*—The following application is strongly recommended :—It is to be applied by means of a pencil, and is to be renewed as often as required, so as to protect the parts from the air, until the cure, which is speedy, is completed :—Collodion 30, Venice turpentine 12, castor oil 6, mix.—*Bull. de Therap.—Med. Times and Gazette, Nov.* 1, 1856, *p.* 449.

121.—*On Inverted Toe-Nail.*—Dr. Batchelder strongly recommends the following procedure:—"Let the deflected portion of nail (which the patient has been in the habit of paring off as much as possible, in order to procure some degree of ease) grow out to be as long as the rest of the nail, or rather to be on a line with the end of the toe—an essential part of the treatment. When this is being accomplished, the patient should wear a loose shoe, *i.e.*, one, the inner sole of which is fully as wide as the foot, and refrain, as much as may be convenient, from standing or walking. When the nail has grown, cut a groove from its root to the end, along the line where the nail begins to deflect, which we will call the angle of incidence. In doing this, great care should be taken not to deepen the groove so as to reach the quick beneath; in fact, not to make the portion of the nail between the quick and the bottom of the reigle so thin as to endanger the splitting of the nail along the groove, for this accident would infallibly stop the process, and compel the surgeon to wait again until the nail had grown out to the required length. This groove effected, the depressed portion should be gently raised and kept up by insinuating, likewise in the gentlest manner possible, a compress about $\frac{1}{4}$ of an inch wide, formed by doubling a piece of thin muslin beneath the edge of the nail, between it and the flesh below. This part of the process should be very carefully performed, to prevent splitting up the nail, as well as to avoid unnecessary pain. The compress should be renewed from day to day, and at every renewal be forced a little further up towards the root of the nail, and its thickness also increased by the addition of one or two duplicatures of the cloth. This treatment must be persevered in until the nail is grown out to its full length, when the cure will be complete, and may be relied on as permanent. Having practised upon this plan for nearly 50 years without a single failure, we have no hesitation in making this announcement." The fungous growths sometimes require touching with nitrate of silver, and the parts must be covered with cerate and the light bandage, the patient resting the foot, at all events at first, on a chair and pillow. A shoe as wide as the foot must be worn to prevent relapse. Enlarging the shoe at the *sole*, in this manner, would originally have prevented the disease, and is a most efficacious remedy for corns.—*New York Journal.—Med. Times and Gazette, Nov.* 8, 1856, *p.* 476.

122.—*On the Seton in Sebaceous Tumours.*—M. MARCHAND calls attention to the superiority of the seton to the knife in the treatment of sebaceous tumours. He passes a curved suture needle, carying a thread, through the tumour, and having pressed out the contents through the holes formed by the needle, he ties the thread as a seton. The tumour when emptied, inflames, and pus is formed and evacuated through the apertures. The thread may be removed in from a week to a fortnight, the suppuration then ceasing, and only slight induration remaining for some days. The size of the thread and duration of the treatment must depend upon the magnitude of the tumour.

If less in size than a nut, an ordinary thread will suffice; if larger, but yet less than a pigeon's egg, a double thread will do; while when it is still more voluminous, packthread must be employed, and left in for a fortnight. The pain produced is trifling, and the patient can at once attend to his affairs. There is not much annoyance caused by the subsequent inflammation, as the small quantity of pus formed readily escapes. The cicatrice that results is very small. This mode of treatment is only applicable to tumours, the contents of which are more or less in the fluid state. The sebaceous matter in some old cysts becomes quite solidified, and in such cases the author makes a large puncture with a bistoury or lancet, presses out the contents, and introduces some charpie.—*Moniteur des Hôpitaux.*—*Med. Times and Gazette, Nov.* 8, 1856, *p.* 476.

123.—*A New Form of Suture.*—At the Samaritan Hospital, last Wednesday, Mr. Spencer Wells made use of a new form of suture he has devised, in an operation he performed for the cure of vesico-vaginal fistula. It appeared to be very easily applied, and the denuded edges of the fistula seemed to be kept in very accurate apposition. The wood-cut annexed represents the suture when complete. A pin, armed with a shot and perforated bar, is first passed through one edge and then through the opposite edge of the fistula. A second bar is than passed over the point of this pin, and then a shot, which is pressed by forceps on to the pin, so as to fix this bar in its place. The pin is then cut off close to the shot. Mr. Wells used a bar perforated with three holes, as the fistula was a large one. When complete, the suture acts on exactly the same principle as the quilled suture, but it is much more easily applied, as the pin answers all the purpose of the needle and thread, is much more easily passed, and it is much more simple to fix the bar by a shot than by tying a knot at a considerable depth from the surface. Mr. Wells found it advisable to pass a suture both above and below the ends of the bar suture, owing to the length of the denuded edge of the fistula; and he did this by a needle carrying a silver wire shotted at one end, then passing a shot over the other end of the wire after it had passed through both edges, so that the two shots pressing on each side of the fistula kept the raw surfaces in apposition. One great advantage of this suture is the ease with which it may be removed, as it is only necessary to snip off one shot to allow the other to be drawn out with the wire or pins fastened by them.—*Med. Times and Gazette, Feb.* 7, 1857, *p.* 141.



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SYPHILITIC DISEASES.

124.—FERRUGINOUS TREATMENT OF PRIMARY SYPHILIS.

By Henry Behrend, Esq., Liverpool.

[Is the venereal poison identical in all cases, or are there different kinds of poison? The author observes that the weight of evidence is in favour of the first assumption; the idiosyncrasy of the patient and the circumstances under which he is placed influencing the kind of sore produced. Hence it follows as a corollary that there must be but one principle of treatment, also modified in accordance with that idiosyncrasy. In the treatment of these as of many other diseases we put too much faith in tradition, and follow the practice handed down to us, whether of mercurialism or non-mercurialism, perhaps chiefly or solely because it is that of which we have had most experience.]

In March, 1854, I was consulted on the following case:—Mr. S——, aged twenty-seven, of sanguine temperament, florid complexion, no hereditary cachexia, and accustomed to live well, perceived, some ten days after suspicious connexion, a little pimple on the inferior surface of the penis, about an inch in front of the scrotal margin. Not deeming it of importance, he lanced it, but it became painful, and he applied to me on the 24th of March. I found a small, deep, circular, irritable sore, with a profuse discharge of a thick, dark-coloured secretion; it was very painful, especially at night. I used the lunar caustic, ordered zinc lotion and warm-water dressings, and recommended him to take blue-pill, but discontinued them after he had taken six or eight, as the character of the sore became developed. It gradually increased in size, and as I found that he increased the irritation by moving about, and attending to his business, I recommended him complete rest, and on the 30th of May he went home to his friends, some thirty miles from Liverpool. I had a consultation with his surgeon there in the course of the following week. At this time, the chancre had assumed a circular form, and appeared the size of a shilling, but it was in reality very much larger, as the edges overhung, and a probe could be passed without any difficulty for a considerable distance underneath them; it was not very deep, and the discharge was less in quantity, but equally dark in colour; it was exquisitely painful, the slightest touch caused him to scream, and he had hardly any sleep. He was confined to his bed, and was ordered the potassio-tartrate-of-iron lotion (one ounce to six of water) and a pill of the iodide of mercury. I wished him to take the potassio-tartrate-of-iron internally, but this was overruled. The sore was so painful that he could not bear the lotion, however much diluted. A variety of other local applications was employed, including plaisters, ointments, oak-bark decoctions, &c., and the nitrate of silver and strong nitric acid were frequently used, but they had hardly a fair trial, as the sore was so sensitive that he shrank from the slightest touch, and would allow no one but himself to apply the caustics. At length Ricord's aromatic wine was used as a local appliance, the nitrate of silver was employed daily, and he continued the iodide-of-mercury pills. Opium was given in vain to produce sleep. We allowed him generous diet, and a bottle of claret a day. Under this treatment, the discharge improved in appearance, but the sore continued its gradual increase. On the 27th of June, after remaining a month with his friends, his medical man advised removal to the sea-side, and he was accordingly put once more under my care at New Brighton. I found him in very depressed spirits, he had lost his ruddy complexion, and was much reduced from pain and loss of sleep. The sore was about the size of a florin, and had extended to the scrotum, a portion of which was included in it; the margins were rough and elevated, and were level all round with the extent of the sore. At one margin, upon examination by a magnifying-glass, an attempt at cicatrization was perceptible; elsewhere no appearance of the kind was visible. The discharge was healthy. I ordered him to cease the treatment he had previously pursued, to take two teaspoonfuls of the potassio-tartrate-of-iron mixture, (one ounce to six,) three times a day, and to apply the aromatic wine twice daily. Generous diet, a bottle of champagne a day, plenty of fruit, no pastry or cheese. An improvement became at once manifest. He took the iron after a few days in the form of pills instead of the draught, the taste of the latter being objectionable, but no other change was made in the treatment. Cicatrization went on rapidly, and the margins and granulations, which required stimulation, were touched daily with the Vienna paste or the nitrate of silver. At the end of the first week of this treatment, he slept well, had an excellent appetite, and was able to leave the house and take short walks; and at the end of the second he came to Liverpool, and attended to his business. At this time, the sore had cicatrized so rapidly as to be reduced to the size of a fourpenny-piece; the granulations were perfectly level, and the margins but slightly elevated; the portion of the chancre which was healed had left a hard, thick, and solid cicatrix. On the 27th of July, he ceased all treatment, and the sore was entirely cicatrized, with the exception of a point, scarcely as large as a pin-head; he had for some days been very careless, thinking himself quite well, and had left off all local applications. I ordered him to use a weak lotion of sulphate of zinc, and in five days the chancre was completely healed. He had now regained his usual appearance, suffered no inconvenience whatsoever, and was in perfect health. I saw this gentleman a few weeks ago, when he informed me he had no secondary symptoms.

The employment of the potassio-tartrate-of-iron in the treatment of phagedænic chancre is no novelty, having been recommended by

Ricord ten years ago, and prescribed by him since both in hospital and private practice. The method of its administration is given at some length by Mr. Acton, and though I differ from him in some of the details, yet I quite agree with him in the high estimation in which he holds the remedy. The above was the first case in which I had the opportunity of giving it a fair trial; and holding the opinion that the virus of a phagedænic chancre is identical with that of every other form, (the phagedæna being attributable to special circumstances, and, as it were, a modification superadded to the original disease,) I determined to treat every case of primary syphilis that should present itself to me in precisely the same manner. The accumulative experience of each case confirmed me in the correctness of this view, and has given me entire confidence in the powers of the potassio-tartrate-of-iron to cure every type of the primary sore. Of course, there must be special cases which, owing to some reason that I confess myself unable to explain, will fail to yield to this method of treatment, precisely as there are special cases of ague which resist the action of quinine; but I believe the exceptions will be equally few. I have, however, had no opportunity of testing its efficacy in sloughing phagedæna, not having during the last two years met with a case. In military hospitals in this country, owing to the regular inspections of the troops, this type of venereal sore must be exceedingly rare, and it is an undoubted fact that in civil practice also, even in the hospitals of large seaport towns, we no longer see such fearful complications of this disease as were formerly prevalent. Of course, I do not exclude the use of caustics in the treatment, if necessity arise for their employment; but so far I have had no occasion to resort to the use of any but the nitrate of silver. I prescribe the potassio-tartrate for internal administration in the form of a solution of one part of the salt to six of water, of which two teaspoonsful are to be taken three times a day, or according to circumstances; and I use a solution of the same strength twice or thrice a day as a local application to the part, diminishing the frequency of the application as the case progresses towards a cure. With very rare exceptions, no other remedial agent is employed. It is necessary to give instructions to the patient to be careful in the appliance of the lotion, as he is extremely liable to remove the lint roughly, and take away with it an incipient cicatrix or healthy granulations.

[The author being anxious to watch the progress of primary syphilis under the old and present systems, administered the potassio-tartrate to a patient suffering from several chancres, and blue pill to another who had only one. The result, as will be seen, was decidedly favourble to the former.]

May 12th, 1855. Charles L., aged eighteen, admitted into hospital, with four or five chancres around the internal surface of the prepuce, extending to the free edge; some preputial œdema. To take the potassio-tartrate and apply it as a lotion.

14th. Great improvement; all the sores look healthy and discharge but slightly.

16th. The chancres have continued improving up to this day, but they have now assumed an unhealthy aspect, are inflamed and coated with a thick yellowish secretion; no pain. Continue.

18th. The unhealthy action has quite ceased, and the sores are rapidly cicatrizing.

19th. Cicatrization complete.

20th. Discharged cured.

May 12th, 1855. Thomas W., aged twenty-nine, admitted into hospital with a chancre of the frænum; no pain; a very slight case. Touched the sore with caustic, and ordered the potassio-tartrate lotion, and five grains of blue-pill three times a-day.

14th. Sore cleaner; discharge healthy.

18th. The gums are slightly touched; the sore improving. To take two pills daily and continue the lotion.

20th. Continued improvement; the chancre rapidly improving.

24th. Discharged cured.

He was readmitted on the 7th of June, with bubo of the left groin: poultices were applied, the bubo lanced, and he was finally discharged, June 24th.

Urethral and external chancre; bubo; combination of mercurial and ferruginous treatment; cure in five weeks.—Peter B., aged twenty-one, a recruit, contracted chancre six weeks ago; a fortnight later, a bubo appeared in the right groin. Shortly after perceiving the sore, he was treated with blue pill and black wash, but he has led an irregular life since, and has not steadily persisted in the treatment. The bubo was lanced. He presented himself before me, as a recruit sent in from an out-district, on the 19th of August, 1855, and was at once taken into hospital. The bubo is healing; the chancre is exceedingly large and deep, extending from some distance within the canal of the urethra to the juncture of the prepuce and glans, having completely destroyed the frænum; the edges externally are sharply and well defined, and the general aspect of the sore is that of a deep excavation; there is a profuse purulent discharge, and no attempt at granulation. He is a robust, healthy man. The iron treatment externally and internally.

Aug. 24th. A wonderful improvement in the chancre; externally to the urethra it has granulated rapidly, and is almost level with the surrounding parts; the portion nearest the prepuce is ready for cicatrization.

27th. A part of the sore near the urethral orifice, and another portion near the prepuce have cicatrized, dividing the ulceration into three segments, all of which present a healthy appearance.

31st. While the ulceration external to the urethra is contracting daily, that which is internal, and of course beyond the reach of the local application, is extending both in circumference around the orifice, and in depth within the canal. He feels now pain in micturition.

Sept. 7th. The external portion of the chancre is almost entirely healed; the internal part, however, does not appear to progress. To cease taking the potassio-tartrate internally, continuing it locally; to take four grains of blue-pill three times a-day.

22nd. He has taken thirty pills. There is a sensation of numbness in the gums; the sore internally is progressing favourably and nearly healed; the external sore has long since disappeared, except immediately around the orifice. Micturition causes no pain. To cease the pills and continue the lotion.

26th. The chancre is perfectly healed. Discharged.

Nearly all the cases above related remained under my supervision, as one of the medical officers of the regiment, for many months, some for a year, subsequently to their discharge from hospital. *Not one had a single symptom of secondary syphilis. I have not had a single case of secondary or constitutional syphilis after treatment with the potassio-tartrate of iron alone, either in hospital or private practice, and the only two instances in which secondary symptoms have appeared since I commenced this plan of treatment have been in cases where I combined the iron with the mercurial treatment.*

If the test of experience confirm the results at which I have arrived, the advantages of this method of cure over the mercurial treatment are too obvious to need any comment. In every case in which it has been administered, the patient's health has been materially benefited by a course of this tonic; and if the avoidance of the unpleasant, and at times dangerous, consequences of a course of mercury were the sole recommendation of the proposed plan of treatment, it would be amply sufficient to entitle it to a careful and extended trial. But when, in addition to this, we have the improvement of the constitution by the furruginous tonic, the good diet, the facility of the cure, the freedom from confinement and restraint, and the immunity from secondary symptoms, the improvement upon the old system of treatment can scarcely be overrated. I am not at present prepared to speak of the efficacy of the potassio-tartrate of iron in constitutional or secondary syphilis, but I have several cases under treatment, the results of which I shall make known as soon as they are arrived at. There appears to be a decided intolerance of the medicine on the part of infants, for in one or two instances in which I have prescribed it for them in the constitutional form of the disease, nausea and vomiting have supervened. My observations, however, have not yet been sufficiently extensive to warrant the expression of an opinion on any other phase of the disorder than the primary sore; and in the treatment of this, after the detail of the preceding cases, I think I am .ustified in placing full confidence in the therapeutic power of the remedy.—*Lancet, Nov.* 15, *and Dec.* 20, 1856, *pp.* 534, 673.

125.—ON THE TREATMENT OF SOME OF THE SECONDARY AND TERTIARY FORMS OF SYPHILITIC DISEASE.

By T. Spencer Wells, Esq., Surgeon to the Samaritan Hospital, &c.

First, of the simple *rashes*, or syphilitic exanthemata. The simple febrile roseola requires no medical treatment. It yields to mild aperients and diluents. The annular form of roseola, which very much resembles measles in appearance, very soon yields to the iodide of potassium; that is, if you give it before desquamation has taken place and the copper-coloured stain has formed. When this has once formed it will not disappear for many weeks or months, whatever treatment you employ. Syphilitic purpura must be treated by a generous diet, and the iodide of potassium with decoction of bark.

Next, let us take the syphilitic *papular* eruptions. The simple syphilitic lichen you will find obstinately resisting every internal remedy; but I have never seen a case which was not rapidly cured by a strong lotion of the bichloride of mercury, 10 grains to the ounce. In the ulcerating form of lichen the iodide of mercury, given internally, is the best treatment; you give a grain every night in a pill, with 2 or 3 grains of the extract of conium or hyoscyamus; and after a week give the pill night and morning. A fortnight generally makes a vast difference for the better under this treatment. If the mouth become at all sore you will do well to omit the pills for a few days, and return to them. Syphilitic prurigo is a very obstinate affection; but it yields more readily to sarsaparilla than to any other remedy. You must take care, however, that the druggist who makes up your prescription really uses sarsaparilla. I have been so often disappointed in this manner that I have long followed a hint of Sir Benjamin Brodie's, and ordered Hudson's Syrup of Sarsaparilla, which is a preparation on which you may safely rely.

In the *scaly* forms of syphilitic eruptions, lepra and psoriasis, Donovan's solution is the most efficacious internal remedy. It is the liquor arsenici et hydrargyri hydriodatis of the Dublin Pharmacopœia, and you may give it in doses of 10 minims to half-a-drachm three times a day. The best local applications are, the bichloride of mercury lotion and the red precipitate ointment. In some cases, the mercurial vapour bath will be very useful; you can apply it very easily in any house. Get a common chair with a wooden seat, on the seat place a folded blanket, let the patient sit naked on this blanket; then have three or four blankets tucked round him, falling from the neck like a cloak on to the ground; place his feet on a footstool within the cloak, put a spirit-lamp beneath the chair, and over this a tin-plate, on which you place the mercurial preparation you mean to use. The blankets are not to be used if the patient has one of the waterproof cloaks sold with spirit-lamps expressly made for vapour baths. The advantage of the blanket is that you find it everywhere.

Mr. H. Lee has devised a very convenient form of spirit-lamp for this purpose, which is made by Mr. Mathews, of Portugal-street. The burning spirit is enclosed in wire-gauze, and there is a little tin saucer, in which the mercury is put over the light. A similar lamp is used for water, so that moisture may be used with the mercurial vapour. A pipe is fixed over the saucer when it is desirable to localize the action of the vapour. [See Art. 131 of this vol. for a wood-cut of this apparatus.] Among Hospital out-patients, or in Union practice, you will not be able to afford spirits of wine. The simplest plan, then, is to have half-a-brick heated in the fire, and put in a chamber-pot beneath the chair. The calomel, or other mercurial preparation, is then simply thrown on the brick, and it soon vaporizes.

If you use the bisulphuret, you may begin with a drachm, and increase to two or three drachms. If you use the iodide, 5 grains will be often sufficient, but you may increase it to half-a-drachm. I prefer a mixture of the two, as recommended by Mr. Langston Parker; and generally order 10 grains of the iodide, with a drachm of the bisulphuret, increasing the dose to double this quantity. At the Lock Hospital calomel is generally used, as a smaller quantity is required, and it is vaporized at a low temperature. Ten grains suffice at each fumigation. I can tell you nothing of the effects of calomel vapour from my own experience, as I never like to change a remedy when I can rely on the effects it produces.

You may use the vapour simple or combined with the steam from boiling water, in either case supplying the patient freely with drink and putting a cold wet towel on his head if he complain of headache or fulness. In strong people, you may keep up the exposure to the vapour for ten or fifteen minutes after perspiration appears on the forehead; but weak people do not bear it longer than is sufficient just to induce perspiration In either case, directly the blankets are removed the patient must be rubbed thoroughly dry. If he have a good servant, and especially if he cannot afford time for confinement, a wet sheet wrung out of cold water should be flung over him the instant the blankets are removed, and rubbed vigorously over the back, while he himself rubs his chest and legs; then a dry sheet should be used in the same way. In this manner the skin is rendered less sensitive to cold, and the relaxing effects of the vapour bath are diminished. You may repeat the baths two or three times a week.

The only *vesicular* form of syphilitic cutaneous disease you are likely to be called on to treat is Rupia, and it is over this debilitating and dangerous affection that Dr. Williams has given us such complete power. Mercury is most dangerous if given internally or rubbed in, as he has shown; while, unless the patient be actually dying, you will always cure him by giving him the iodide internally, and using the red precipitate ointment locally. You will, of course, remove the hard crust or scab with a poultice before applying the ointment. If the patient be much emaciated you will at the same time give a liberal animal diet, with wine and beer.

The only syphilitic *pustular* disease I need allude to is Ecthyma. This again is aggravated by mercury; but sarsaparilla often cures it. When it has gone on to ulceration it has to be treated exactly as a case of rupia, with the iodide internally and the red precipitate ointment locally.

The syphilitic *tubercular* eruptions are always obstinate. You must never promise a rapid cure. The mercurial vapour bath is the best treatment, and the red precipitate ointment if ulceration have taken place.

Cutaneous *excrescences* or *growths* may be easily destroyed by strong acetic acid or the muriated tincture of iron; but Ricord's plan of using a chloride of soda lotion for a few days, and then sprinkling the growths with calomel, is the best treatment. A few days will suffice to get rid of very large growths.

Let us now pass to the treatment of syphilitic diseases of the bones. It is in the hard periosteal node on any part of the body that the iodide of potassium is the specific remedy. It was in 1831 that Dr. Williams made his first experiments with it, and he went on until he showed that its effects are as certain as those of quinine in ague. The pain is relieved at once, and it is only in the old node where bony growths have formed, a condition, as Dr. Williams used to say, we ought never to see again in this country, that it fails to remove the tumour. The dose he used as a general rule in an adult was eight grains three times a-day, and to this dose I have generally adhered. Less is not enough, and more is too much. Give it simply dissolved in water or camphor mixture. Dr. Williams showed the absurdity of adding free iodine to the mixture. The iodide contains three-fourths of its weight of pure iodine, so that a patient taking twenty-four grains in the twenty-four hours takes eighteen grains of iodine. No good can be done by adding half-a-grain or a grain of iodine to this. It only irritates the stomach, and may oblige you to discontinue the remedy. A month is about the average period of treatment; but it will be longer, as Dr. Williams showed, if mercury have been used before.

The soft or gummy node is very little influenced by any general treatment, but it gradually yields to repeated blistering.

Inflammation of the substance of the long bones must be treated on general principles, bearing in mind, however, the great power of the iodide. When the bones of the nose, palate, or face, are affected, it is generally after some continuance of chronic coryza, characterized at first by constant snuffling, and a free discharge at first of mucus, and afterwards of fetid pus, which dries and forms scabs within the nares. Then the septum is perforated by ulceration, and the disease, if unchecked, goes on to destroy the columna and alæ, spongy bones, vomer, ethmoid, and nasal bones, and, perhaps extends to the bones of the base of the skull. This is a state of things we never ought to see. The iodide will prevent exfoliation, if given early enough, but it has not much power by itself if the disease have gone on. However, in any stage, you can *always* stop the disease, and save the nose if not already lost, by combining the internal use of the iodide with the local application of mercury, either by local injection of black wash, the insufflation of 2 grains of calomel with 5 grains of powdered gum night and morning, or what is better still, by the red precipitate ointment when you can apply it.

In those chronic diseases of the joints which depend on syphilitic affections of the ligaments and fibrous capsules, either with or without synovial inflammation and effusion, the iodide of mercury is more generally useful than the iodide of potassium. But these affections are very obstinate, and it does not do to continue the mercurial preparation too long, so that it is a good plan to give a grain of the iodide of mercury every night for ten nights, and then give the iodide of potassium, 15 to 24 grains daily for a week or two, returning to the mercurial if necessary. Blisters at a small distance from the affected joint, and iodine paint over it, hasten the cure. A liberal diet should generally be given in these cases. Occasionally, when the general health has been a good deal affected, and the stomach did not bear either of the iodides well, I have found a liberal meat diet with port wine, and four or six ounces of lemon-juice daily, answer remarkably well. When the ankle-joint is affected, I prefer friction night and morning in the warm nitro-muriatic acid bath to blistering or the use of iodine paint. The bath is made by mixing three parts of hydrochloric acid and two parts of nitric acid with five parts of water, and adding three ounces of this dilute acid to each gallon of water.

Then as to those dangerous affections of the throat known as syphilitic angina. In the slighter cases, where the ulceration though extensive is superficial like an excoriation, and the general health of the patient is pretty good, it is well to use mercurial fumigation, taking care, however, to stop it as soon as the healing process commences, and not to induce salivation. The mercurial vapour may be inhaled with advantage, thus affecting the throat locally. The grey oxide answers here better than the bisulphuret, as it causes less coughing or sneezing. In the more severe cases, where the ulceration is deep and phagedænic, and the constitution of the patient a good deal shaken, Dr. Williams's treatment by the iodide of potassium internally and the red precipitate ointment locally acts like a charm. The sloughing process is checked at once, healthy granulations spring up, and the miserable emaciated being flushes up into new life. Good beef-tea and sago with plenty of port wine must be given at the same time, but this does not do alone. It is the combination of the local use of mercury with the internal administration of the iodide which is so wonderfully potent for good in these cases.

In some cases of advanced syphilis the mucous membrane of the larynx is thickened and ulcerated, and you have all the symptoms of chronic laryngitis, loss of voice, and cough, with copious and often fetid expectoration, and difficulty and pain in swallowing. Œdema of the glottis may come on and the patient die of asphyxia, unless you save him by tracheotomy and thus gain time to cure the disease. Such patients are often too much broken down to bear mercury, and you will have to treat them with good diet, nitro-muriatic acid and sarsaparilla, or cod-liver oil with iodide of iron at first, and afterwards the iodides of potassium or mercury. A great deal of relief is often afforded by sponging the glottis with a strong solution of nitrate of silver, 10 or 20 grains of the nitrate to the ounce of water.

Then I must say something about those syphilitic affections of the hair and nails you may often see in practice. The loss of hair, *alopecia*, is very common with other secondary symptoms. The hair withers as it were and comes off in the hand or the comb—not only the hair of the scalp, but all over the body. This generally occurs with scaly or other superficial skin diseases and superficial ulceration of the mucous membrane; rarely with tubercular or pustular affections or the excavated ulcers of the fauces. Sometimes when the hair does not fall off there is a constant formation of scurf on the scalp in large quantities, which is very annoying and troublesome. These are cases to treat by mercurial fumigation constitutionally, the mixture of iodide and bisulphuret answering best. The head should be shaved two or three times, and should be anointed every night with equal parts of the red precipitate ointment and scented pomatum. This should be washed off in the morning, and the head rubbed with a stimulating liniment. One which answers very well is made by one part of tincture of cantharides, one of eau de Cologne, and two to six parts of glycerine, according to the irritability of the skin. The mercurial soap recommended by Sir Henry Marsh is useful in these cases. It is made by beating up a drachm of white or red precipitate with an ounce of Windsor soap.

As to the *nails*, you may see them simply drop off, without any other change; or they become thick and opaque, and crack; or the matrix inflames, the skin around the edge ulcerates, and fetid pus exudes from between the nail and the skin. I have known people who had been troubled for years with this state of things. In the treatment you must trust a great deal to the local use of mercury, either in ointment, powder, or vapour. Constitutionally, the bichloride with bark answers better as a general rule than other preparations of mercury, or the iodide of potassium, but you may have to ring the changes upon these.

Then you will remember I described to you pretty fully the secondary syphilitic affections of the tongue, and told you how to distinguish the increased vascularity and tenderness, the superficial and deep ulcerations, and the cracks and vegetations, from analogous conditions produced by mercury and iodine; and the hard solid enlargement or nodulation from incipient scirrhus. As to the treatment you will generally have to employ mercurial fumigation and the administration of opium pretty freely. Strong gargles of tannin are often useful, and the linimentum æruginis of the Pharmacopœia is an excellent application to the deep cracks or fissures you sometimes see almost splitting the tongue into two.

Then in the substance of other muscles you sometimes get these solid tumours. They are often called muscular nodes, and occur with the affections of bones. Their most frequent seat is the flexor muscles of the leg and forearm. You had better treat them by the iodide of potassium internally, and locally by iodine paint, friction, and pressure, or a succession of blisters. This will generally disperse them; but I have seen them soften, and after a puncture continue to discharge a sort of glairy synovia for several weeks, which gradually ceased as the general condition improved.

A few words as to the treatment of *syphilitic iritis*, a form of disease I described to you at some length. If you meet with it in an acute form in a patient otherwise in pretty good health, you must put him on low diet, avoid all stimulants, shade the eye, apply a few leeches to the temples, and below the inner end of the lower lid, have the bowels well cleared out, and then commence at once with the use of calomel and opium. The best plan is to give a grain of calomel with a quarter or a sixth of a grain of opium every three hours, until you see that all effusion of fibrin has ceased. It is neither necessary nor desirable to make the mouth sore, and you will frequently see a stop put to the effusion of fibrin even before the gums become in the least tender. As the fibrinous deposit becomes absorbed it is well to foment the eye-lids, brow, and temples, with a tepid lotion, composed of a drachm of extract of belladonna to a pint of water, or keep a piece of spongio piline wetted with this lotion over the eye; but remember that the pupil will not expand until the fibres of the iris have been partly freed from the effused fibrine. You will also gradually cease the mercury, giving it in smaller doses, and at longer intervals, until vision becomes clear, and the vascular zone around the outer edge of the cornea disappears. But you may meet with syphilitic iritis in a very different class of cases. The patient has been either debilitated by a long course of mercury or other causes, or the disease may have arisen while he was actually under the influence of mercury given for some other form of syphilitic disease. This is a more destructive and intractable form of disease than the acute. You will have to allow a liberal diet, and send the patient into the country if possible. If he will bear the iodide of iron, give it at once; if not, give quinine in as large doses as the stomach will bear, and then give the iodide of iron. In cases where the debility is not so very great and mercury is still contra-indicated by the state of the patient, the oxide of potassium may be used with success. If you meet with the disease in an infant, you will do well to use mercury inunction, in the manner I shall presently describe to you. In the form of iritis, which I told you follows gonorrhœa and synovitis, and in which there is so large a deposit of curdy lymph in the anterior chamber and on the surface of the iris, remember that the three affections, gonorrhœa, synovitis, and iritis may alternate. Treat the iritis actively by leeching, purging, calomel and opium, blistering, and belladonna fomentations, and you will treat it successfully. The lymph will disappear, but prepare your patient for a return as long as any gleet or synovitis remains.

In cases of syphilitic disease of the *testicle* you may find the organ simply enlarged, smooth, and heavy; or enlarged by uneven irregular hard knots—in either case without much pain or tenderness in the testicle itself, but with a good deal of uneasiness in the loins from the weight, and often with more or less fluid in the tunica vaginalis. In the latter case it is well to commence the treatment by puncture with a fine trocar; in both forms a mild mercurial course should be commenced if the constitution of the patient does not forbid it. The testicle will, of course, be supported by a bandage; and much good is done by exerting a certain amount of compression on it by painting the scrotum with collodion. If mercury be contra-indicated, the iodide of potassium is the next best remedy, given in the doses I have before directed.

With regard to the treatment of secondary syphilis in infants, I cannot speak too strongly of Sir Benjamin Brodie's plan. He has a flannel bandage rolled round the knee, with a drachm of mercurial ointment spread on the end first applied. This is repeated daily. It does not affect the gums. It causes neither griping nor purging, but it cures the disease. Sir Benjamin says, "Very few children ultimately recover in whom mercury has been given internally; but I have not seen a single case in which this other treatment has failed." I can entirely corroborate this statement and would strongly advise you to remember it. Of course the mother and nurse must be treated at the same time. If any of your patients have had children born dead with evidence of syphilis, or if there have been frequent abortions, and either father or mother have suffered from secondary syphilis, you will do well to treat them both by a mild course of mercury. Even if a woman be pregnant do not be afraid of mercury leading to abortion; on the contrary, it preserves the life of the child. Inunction is a good plan in these cases. If primary sores should occur during pregnancy, you will, of course, treat them on general rules, but avoid much mercury in the ninth month. If, in attending a labour, you discover a chancre on the woman's genitals, remember the danger of inoculating the child or yourself, and destroy the virus by applying caustic or nitric acid to the chancre as soon as you discover it.—*Med. Times and Gazette, Dec.* 20, 1856, *p.* 611.

126.—ON THE COMMUNICATION OF SYPHILIS FROM THE FŒTUS TO ITS MOTHER.

By Jonathan Hutchinson, Esq., Surgeon to the Metropolitan Free Hospital.

[It is no uncommon thing to meet with cases in which married women become the subjects of constitutional syphilis without having ever manifested any primary symptoms. In these cases Mr. Hutchinson maintains that the disease results from contamination of the maternal fluid by those of a fœtus in utero, begot by a syphilitic father.]

Numerous cases, (say Mr. H.) have led to the doctrine, now almost universally held, that a father begets children liable to his own diseases and constitutional taints, and that, consequently, a child may be born of a healthy mother, which shall, in virtue of a morbid predisposition derived from its father, suffer from hereditary syphilis. This doctrine is so simple, and although we know nothing whatever respecting the mode in which the paternal influence is thus communicated to the ovum, yet the fact is so abundantly demonstrated that it now obtains very general credence. In a very large proportion indeed of the cases of congenital syphilis the disease is now acknowledged as derived from the father only. Thus much respecting the father's influence on the fœtus; let us now glance at that of the latter upon its mother, and that of a husband suffering from constitutional taint only upon his wife. Until within a very recent date, (twenty years, perhaps), I believe I may assert that the idea of a syphilitic fœtus in utero exerting a contaminating influence on its mother had not entered the minds of any. On the other hand, cases in which married women became the subjects of constitutional syphilis, while there was every reason for believing that they had never had any form of primary disease, were so frequent that they attracted the attention of almost all writers on the subject, and elicited several different attempts at explanation.

Contamination of the Fœtus probable.—The well-established anatomical fact, that the structure of the placenta does not admit, as formerly held, of any real admixture of the maternal and fœtal bloods, and that, where nearest to each other, two layers of cells intervene to separate the fluids, might at first sight be thought to militate against the probability of the fœtus being able to influence the fluids of its parent. There are, however, abundant facts to prove that not only does the nutritious plasma pass by imbibition through this membrane, for the supply of the fœtal wants; but that morbid poisons, as that of small-pox, for instance, may in the same manner be communicated from the mother to the ovum. Why, then, should not the converse be possible? Why should not a structure, which is permeable in one direction, be so also in the other? And here some important observations in cattle-breeding come in support of the theory. It is well known amongst graziers that a cow or mare which has once been impregnated by a male differing markedly from herself in species, will afterwards produce to males of her own breed offspring resembling more or less the former. A notable instance of this, quoted in the 'Philosophical Transactions,' happened in the case of an Arabian mare of Lord Norton's, which, having had a hybrid foal to a quagga, subsequently on three occasions brought forth to well-bred horses offspring which, in stripes on the shoulders, &c., bore unequivocal resemblance to the quagga. The most probable manner of accounting for this is that suggested first by Mr. Macgillivray, in the 'Aberdeen Journal,' and quoted in an excellent paper on this subject by Dr. Harvey of Aberdeen, viz.: that the blood of the mother had become contaminated by her first pregnancy, and had acquired some of the peculiarities of the fœtus which it had nourished. The deterioration in temper and spirit, which is known to ensue to a mare in foal by an ass, is further strong evidence in corroboration of this opinion. In all probability, the placenta performs to the fœtus the functions of stomach, lungs, kidneys, liver, all in one. By its means, not only is the nutritive material absorbed and prepared, but the excreta and effete elements of the fœtal body are eliminated and cast off into the maternal blood. Granting this, there is no difficulty whatever in the understanding how an ovum, whose fluids were affected by specific contamination, would be likely to communicate the same taint to the mother, in whose womb it lay. And this, perhaps, is all the proof the subject is at present susceptible of, unless, indeed, we were to reason in a circle, and adduce as evidence that the fact is so, the following cases which are believed to be examples of it. There are but few diseases transmissible hereditarily with sufficient regularity, excepting syphilis and gout, to be likely to furnish instances of its occurrence; and, with regard to the latter, I am not aware that as yet any observations have been made.

Tabular Report of Cases.—The tables which accompany this paper (see 'Med. Times and Gaz.' for Oct. 11, 1856, pages 366, &c.), contain abstract reports of 50 cases which have fallen under my observation during the last six years, in which I believe that constitutional syphilis was communicated to mothers by the agency of diseased conceptions. Forty of them have occurred to myself, either in private practice or at the Metropolitan Free Hospital, and the remaining ten I saw at the Hospital for Skin Diseases, and am indebted to my friends Messrs. Startin and M'Whinnie, for permission to make use of. And here let me state that these cases have been copied from miscellaneous note-books, and were for the most part originally recorded without any particular theory in view. The reasons which induce me to think that these fifty cases illustrate the occurrence referred to are the following:—

1. That such occurrence is, as just shown, possible and probable.

2 That in all the cases the patients had been pregnant, and that in all there was good reason to believe (if not absolute certainty) that the offspring had been diseased.

3. That all the patients manifested specific symptoms of syphilis, while there appeared every reason to believe their assertions that they had never suffered from primary disease. The evidence upon which, in each case, the disease was pronounced specific is given in a separate column in the tabular report, and more need not here be said respecting it. With regard to the probability of primary symptoms having been absent, I shall have to speak directly.

4. Because the train of symptoms was peculiar, being mostly of the late tertiary class, the secondary ones having, with but few exceptions, been wholly passed over.

5. Because, in many cases, there were distinct exacerbations of the symptoms during succeeding pregnancies.

6. Because, in most cases, the symptoms had commenced during pregnancy.

7. Because the cachexia of the mother had usually increased gradually and, *pari passu*, with the number of pregnancies.

Sources of Fallacy, and Nature of Proof.—Now there is one source of fallacy to which all inquiries regarding venereal affections are exposed, which is of great importance respecting the value of these cases, and that is the possibility of wilful untruthfulness in the history given. In all the cases narrated, after a careful sifting of the history, I thought there was good reason for believing the patient's statement, that she had never suffered from primary disease. Now, there is not, I am quite willing to admit, any one single case in the report, on the freedom of which from all possibility of error in this respect I could speak positively. Nor do I believe that it would ever be possible to obtain a case the absolute accuracy of whose history should be such as to prove the question. Were the cases rare and exceptional I would disbelieve them; but when, on the contrary, we find numerous patients presenting under similar circumstances the same group of symptoms, and concurring to offer with the greatest positiveness the same account of their disease, we have, I think, fair ground for believing that they are truthful. The old adage, that "what every body says must be true," comes to be, I think, logically applicable. The cases resemble a bundle of twigs, each one of them slender, and alone easily broken, but when bound together of great strength. In many instances the women were mothers of syphilitic children, and already suspected the nature of their own symptoms; and in some I deemed it my duty to explain to them its real character in order to induce their persevering use of a course of treatment; while in others I had both husband and wife under care, in the hope of eradicating the constitutional taint. Now, with those who are fully aware of the real nature of their disease, and who freely admit it, there can, I hold, in the majority of instances, be no ground for concealment as to its early symptoms. A woman who is aware that in some way she has been infected by her husband with a venereal complaint, is not likely to deny to the Surgeon from whom she seeks relief the previous existence of sores on the genitals, had such ever occurred; and yet less is it probable that both husband and wife, while both admitting the correctness of the opinion given by their adviser as to the nature of their complaint, should combine to mislead and deceive him. And here it may not be beside the mark to again observe, that it is not the recognition of the occurrence of such cases that is novel, but only the mode adopted for explaining them. With very few exceptions, indeed, all modern Surgeons have admitted the occurrence of cases in which, by cohabitation, constitutional syphilis has been transmitted without the occurrence of primary symptoms. The following case, narrated by Mr. Langston Parker, is so much to the point that I am tempted to quote it. He gives it as an example of the contagion of secondary symptoms.

"A gentleman, who had suffered both from primary and secondary syphilis, married, after having been free from all symptoms for twelve months. Soon after this he had another eruption and sore throat; his wife became affected with the same eruption, excavated ulcers in the tonsils, and was prematurely delivered of a dead child in the sixth month of her pregnancy. Both patients lost their hair and eyebrows. On account of the obstinacy of some of the symptoms in both these cases, they were sent to me from a distance, to be treated by the moist vapour of mercury, under the use of which they both perfectly recovered. In this case the lady was more than once carefully examined; she was free from all evidence of primary disease, and had never suffered from the least irritation of the parts."

I would confidently class this as an instance of the conveyance of syphilis to the mother by the fœtus. In commenting upon it, Mr. Parker, with his usual sagacity, points out a circumstance to which I have already adverted, and which was many years ago remarked upon by Dr. Wallace, namely, that when syphilis is thus derived, the symptoms correspond pretty exactly in the communicant and receiver. In other words, the woman to whom syphilis is communicated without the intervention of a primary sore, does not go through the *rôle* of phenomena which she otherwise would have done, but shows at once pretty exactly the same kind of symptoms that her husband does. The following is a case in point:—

James T., a master hairdresser, aged 24, came under my care in December 1854, on account of syphilitic condylomata on his tongue and over the pharynx, from which he had suffered more or less for seven months. He told me that he had had a sore on the penis about sixteen months ago, had been salivated, and, as he thought, perfectly cured. Four months after the complete disappearance of the sore and of the secondary rash, he, disregarding a very small abrasion on his tongue, had married. I examined his penis, and found it perfectly sound, not even a trace of cicatrix being visible. He had been married six months, and his wife had remained quite well. She was stated to be now pregnant. On his second visit he stated that his wife had miscarried, and that she was now very ill and had a rash out. His wife after this remained under the care of another surgeon for four months; but in the middle of the April following I was consulted respecting her. Both her husband and herself were fully aware of the nature of the disease, and were anxious to afford me every means of information. I examined the wife, and could find no evidences of a sore having existed, and she stated that she had never suffered from any irritation of the parts whatever, a leucorrhœal discharge excepted. She had now miscarried twice. Before marriage, although delicate, she had been of good complexion, and not liable to any particular affections. She was now very cachectic, covered over the arms and chest with a papulo-scaly eruption, and had numerous large raised condylomata on the tongue, lips, and throat. The condylomata exactly resembled those from which her husband suffered; and the rash, excepting in being more copious, was also exactly like one which he had shown. Both the patients suffered most severely, and in each the symptoms were difficult of relief. Under treatment by the iodides and mercury, with the assistance of a prolonged residence on the sea coast, however, they ultimately regained their health.

Now all surgeons will admit that it is very rare indeed for a patient who has had primaay syphilis to exhibit, in the secondary train of symptoms, any very close similarity to those of the person from whom she had contracted it; and, with such instances as the above before us, —and I could add many others,—I am quite willing to admit the truthfulness of the remark, that syphilis conveyed by contagion in its constitutional stage is far more likely to reproduce its exact self than when it spreads in the usual way by primary sores. I am quite certain, however, that the thing is one only of degree; secondary syphilis reproduces its own resemblance more frequently than primary does so, but it by no means always does. To such an assertion I could adduce many exceptional cases. One rule is, however, I believe, easily demonstrable, and that is, the *class* of symptoms produced will resemble those of the infector; *i. e.*, that primary syphilis will produce primary syphilis, secondary secondary, tertiary tertiary, and so on. It would appear, indeed, that the contamination effected by the fœtus is not so much the communication of a specific disease, as the conveyance of a certain and determinate quantity of the poison, the effects of which will be in exact proportion to the dose. I do not think that the contagious materies thus derived tends to increase its power after being received. To illustrate my meaning: it is well known that the smallest conceivable quantity of vaccine lymph suffices to produce all the train of symptoms of cowpox, and so with the poisons of variola, of glanders, and of primary syphilis. Whoever receives these will go through the whole series of morbid phenomena which they tend to induce, modified, of course, somewhat by his original predispositions. To use the old mode of expression—and I know not that we can find a better—the poison acts as a ferment in the blood. We know also that this train of symptoms, once passed through, the blood, is, so to speak, exhausted of the pabulum on which the poison fed, and is no longer susceptible of disturbance from its influence. We are certain that this is so in small-pox and the other exanthems, and there is good reason for believing that it is also with regard to syphilis received in the ordinary way.

[In cases of this kind there is no violent outbreak of a specific disease, but the blood of the mother seems to have become quietly, and as if by transudation, assimilated to that of the father whose child she is carrying. The effect produced will of course depend upon the quantity of poison communicated.]

Women who during a first pregnancy by a syphilitic father will merely fall into ill-health, but suffer no specific symptoms, will, on a second or third pregnancy, become yet more cachectic, and show unmistakable evidences of the disease. It is, under such circumstances, often very interesting to note the effect of the maternal contamination reflected back upon her offspring. The first children had but one diseased parent, the later ones have two, and very often the influence of this is remarkably shown. A woman of vigorous constitutional power will bear to a syphilitic father children which, in virtue of the sound element contributed by herself, show little, if any, evidences of disease. She herself, however, while doing so, becomes contaminated, and at each succeeding pregnancy is less and less able to protect her offspring, until at length she also communicates to them a poisoned food, and then ensue either a series of abortions, or infants born to suffer from severe forms of hereditary syphilis. Nor does the circumstance, not unfrequently observed,—that the elder children of a family suffer most from hereditary syphilis, and the eldest most of all,—in any way militate against the authority of this law, since the seeming exception is caused by a different and conflicting one. This happens in those instances in which both parents are of robust constitution, the mother able to resist the contaminating influence, and the father rapidly getting rid of his taint,—throwing it off, as it were. It is well known that, in the robust, constitutional syphilis does die out of itself in course of time, though I suspect that, as a rule, this takes place much less quickly than is generally supposed.

It has been already remarked, that one of the most trustworthy reasons for believing that the cases which are the subject of this paper had never had any form of primary syphilis is, that very few of them had ever shown any secondary symptoms. In but 9 out of the 50 cases had any of the phenomena characteristic of the secondary stage ever occurred, and in 2 of these it was very questionable whether they had done so. In a very large proportion indeed tertiary symptoms only were observed. The explanation of this is obvious from what has just been said. The form produced in the mother is identical with that of the father, and in almost all cases the latter had passed through both primary and secondary stages before marriage, and was at the time he begot the contaminating children the subject only of a latent constitutional taint, or of affections belonging to the later of the tertiary class, such as sore tongue, palmar psoriasis, nodes, &c.

Having thus examined the evidence, which appears to me to make it in the utmost degree improbable that these patients had contracted syphilis in the ordinary way, we will now pass to examine the group of symptoms usually present, and then glance at the question, Is it possible that they could have been derived from any other source than contamination by pregnancy? Assuming, however, as I fear the Society will think I have repeatedly done, that the question submitted to their consideration is already proven, I will for convenience sake designate them the

Symptoms of Syphilis Contracted from the Fœtus.—A *peculiar cachexia* must rank first in importance as in frequency among these. A pallid, earthy complexion, loss of flesh, debility, great depression of spirits, and liability to aching pains in the bones, &c., on taking cold, are its chief features, and with these are generally produced one or more of the specific affections about to be mentioned. Cachexia is, however, not unfrequently produced without any specific accompaniments, especially in those who have conceived but once, or whose own powers are vigorous enough to enable them to resist to a great extent the influence of the poison. In such the patients will assure you that prior to marriage they were the pictures of health, and never knew what it was to be ailing; but that since they first fell pregnant they have been always ill, have lost their complexions, and become weak and low spirited. Out of 68 women who had borne syphilitic children, but none of whom there was reason to believe had ever had primary syphilis, I find that but 25 per cent., or 17 of the whole, escaped showing one or other indication of contamination; and in 14 cases cachexia of the kind described was the only morbid phenomenon which had been produced. Of the 50 patients in this list who were believed to have contracted specific symptoms from pregnancy, 23 had marked and severe cachexia, 14 had it in a less severe form, and 12 appeared to be in good general health.

Leucorrhœa in degree of frequency should be next mentioned, but the difficulty of pronouncing with any certainty respecting a symptom of such very common occurrence, when it is specific and when not, prevents its being regarded as of so much importance as it otherwise would. Leucorrhœa was present in 18 out of the 50 cases, or 36 per cent. It had been profuse in very many instances, and of the greenish colour and disagreeable odour which some writers have deemed, falsely, I think, to characterise it as of specific nature.

Loss of hair is a very common sign indeed of constitutional syphilis especially in women. It had occurred to such an extent as to be noticeable in 24 per cent., or 12 out of the 50. The loss usually consisted in a general thinning over the whole scalp, and often included the eyebrows also. It was very frequently observed to occur in connexion with every pregnancy, either before or after delivery. Although not at all infrequent after delivery and during lactation among delicate women quite free from spyhilitic taint, yet I feel certain that it is out of all proportion more common among those who have carried diseased fœtuses.

Sores on the tongue had been present in 22 per cent. of the cases, generally of a slight and transitory character, but often leaving behind the white markings so suggestive of syphilis. Excepting in one instance, in which the tongue was covered with condylomata, I have not seen the more severe of the syphilitic affections of that organ in connexion with the disease derived from fœtal contamination. In none, for instance, were there the deep fissures or indurations which are sometimes seen in other cases. In several instances I have known white margined sores on the tongue to appear during several successive pregnancies.

Fissures at the angles of the mouth, and sores in the linings of the cheek are of frequent occurrence, having been present in 16 per cent. to such an extent as to be of pretty certain diagnosis.

Eruptions.—I have only seen those which I should consider as of the secondary class in 4 instances; in 5 others, however, the patients stated that they had had a general rash over the whole body at a former period, which there was reason to suspect must have been of that class. Of the tertiary ones, psoriasis about the face occurred in 4, psoriasis palmaris in 4, indolent tubercles in 4, serpiginous cicatrising sores in 5, tinea tarsi in 3, erythema in 1, lichen in 1, condylomata in 4, fissures of nipples 1, ulcers on the leg 1. Liability to sore throats on taking cold was mentioned by many of the patients, and 4 of them from their history appeared to have had genuine secondary disease of the pharynx and tonsils. In 1, condylomata were scattered over the pharynx, and in 2 the velum palati had been entirely destroyed by phagedenic ulceration.

Nodes.—Actual nodes had existed in 12 per cent. In a large proportion there had been liability to pain in the bones, doubtless of periostitic origin, on slight colds, &c., and in many of these the nocturnal character of the pain had been well marked.

Proneness to Abort.—The influence of the syphilitic virus as destructive of fœtal life had not been manifested in any large proportion. In case No. 7 many miscarriages at early periods were stated to have occurred, but the woman had borne no living children. In case 26 three abortions occurred within the first two years of marriage. But these are decidedly exceptional to a general rule, as a glance down column four of tho report will show. The frequency of abortions in cases in which the mother has herself been the subject of primary disease is well known, and the comparison between such and the present class is very instructive. In these, it is to be borne in mind, that the fœtus derives its morbid constitution from but one parent, and, in all probability, from one who himself has nearly worn out the tendency. It is evident that a fœtus begot by a father who suffers only from constitutional taint, and nourished in the womb of a mother who is healthy, excepting insomuch as she may have received contamination from itself, has a very good chance of life. And here let me mention a speculation to account for the fact, that a vast majority of syphilitic infants are born healthy-looking, and show no signs of disease until from a week to a fortnight old. This circumstance for long puzzled me exceedingly, and I never recollect to have seen any attempt to explain the difficulty. Ought not the solution to be found in the circumstance, that in a vast majority of cases the mother is healthy and the father only diseased? Receiving, therefore, while in utero, an abundant supply of well-elaborated nutriment, the fœtus lives and thrives, there being no need for the exertion of its own organs of assimilation. But after birth it loses this privilege, and with a constitution enfeebled by its taint, is compelled to digest its food and to aerate and elaborate its blood for itself, hence its speedy manifestation of the hitherto latent disease. In those cases in which the fœtus is born dead, with the skin peeling or covered with eruption, I suspect that close examination would show either that the mother has herself had primary disease or has by repeated pregnancies become saturated with the tertiary taint.

Barrenness.—Absolute arrest of the reproductive function does not appear to be a frequent result of the syphilitic contamination from a previous pregnancy. When it does occur, it may probably be looked upon as a preservative effort of nature to protect the system of the mother from further contamination. That syphilitic men are less fecund than others, is I believe an acknowledged law, but it is a rule which obtains with only very light authority, and about the same appears to be the case with women under like circumstances.

Another Corroborative Fact.—There is yet one other remarkable fact to which I must ask attention, as proving that the mother of a syphilitic infant has really received from it whilst in utero such contagion as it is capable of conveying, and that is, that although abundant instances are recorded in which syphilitic infants having sore mouths have infected the nipples of wet-nurses who have suckled them, yet not a single one, as far as my knowledge goes, has occurred in which the child's own mother was so contaminated. It was Abraham Colles of Dublin who first drew attention to this startling fact, and his experience has been confirmed by subsequent statements by M. Baumes, Mr. Egan, and M. Diday. Now as mothers suckle their own infants in a proportion vastly greater than wet-nurses, they ought, were their liability equal, to furnish a larger number of instances of the disease spreading by this mode. Whence their immunity? Excepting we admit that they have already received the disease to the extent to which the fœtus could convey it, I know not of any explanation which can possibly be suggested.

Is Contagion by the Semen, &c., possible?—It remains now to speak of the other modes which have been suggested as those by which women, whose husbands are of the syphilitic diathesis, but not presenting any external symptoms, may receive contagion. And, first, the theory of contagion directly from the seminal fluid. It would be rash to assert that such communication is impossible, and to deny positively that a fluid which can undoubtedly infect the ovum which it impregnates, is absolutely incapable of conveying its contagious materies by direct absorption, but I know of no facts which make it in the least probable. The cases hitherto held to illustrate it are, I think, far more simply and plausibly explained as contamination through the fœtus. If the infection were caused directly by the spermatic fluid, it ought to be equally common in barren and prolific women. But it is certainly not so: I have seen numerous cases in which the wives of syphilitic husbands have enjoyed excellent health up to the time of conception.*

Conclusion.—And now, in conclusion, there is one question which has, I doubt not, suggested itself to most readers, and which, although a somewhat personal one, offers itself so naturally that some explanation may I think fairly be asked. How comes it, if the truth be as has been contended, that a form of disease of so frequent occurrence should have been so long overlooked? M. Ricord, who believes in the principle, speaks only of rare cases, and doubtingly even of them; and

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* This question is so important that I shall not be acting fairly to the reader if I do not state that since this paper was written (it was read before one of the Medical Societies and discussed) I have been assured by several distinguished Physicians and Surgeons, (Mr. Cock, Dr. Lever, Dr. Oldham, Mr. Erasmus Wilson, &c.,) that they have met with cases which they believed to be genuine examples of contagion by the semen. With the exception of Mr. Wilson, who avers that they are of almost daily occurrence, all admit them to be very rare. In spite, however, of the opinions of these high authorities, I am quite incredulous as to the possibility of the occurrence. Were a man who has had syphilis, but is now apparently quite well, liable by the mere contact of the seminal fluid to infect his wife, how frequent such cases ought to be? Again, the semen is merely a secretion, and although of most peculiar endowments as regards the ovule, we have no reason whatever for thinking that, *except it impregnates*, it has any effect upon the maternal parts to which it is applied, or that indeed it is in any way susceptible of absorption by unabraded mucous membrane. Were it, as being a secretion of a diseased man, capable of conveying contagion on application to the mucous surfaces of another person, so ought the saliva, the milk, and the other secretions. Indeed, the doctrine once admitted would lead to most improbable consequences. On the other hand, that a diseased ovule may infect its mother is easy to comprehend, since there is a known interchange of fluids. That in the supposed exceptional cases unsuspected abortion at very early periods had really occurred, seems to me by far the more probable supposition. It must be borne in mind, that just in proportion to the virulence of the taint communicated by the father would be the liability on the part of the ovule to early death. The most diseased, in other words, those most capable of infecting the maternal system, would be the very ones most likely to die and be expelled at early periods. A conception following close on one menstruation might be carried for a month, and if expelled at or near the occurrence of the next would excite no suspicion in the mind of the mother that she had ever been pregnant, althought it might, meanwhile, have severely affected her system. In this way, within six months of marriage, several contaminating impregnations might occur; and, as the instances of constitutional syphilis conveyed without either primary sores or known pregnancy are very rare, I would far rather have recourse to such an hypothesis as this than believe in contagion by the direct absorption of a normal secretion.

Mr. Acton, who, following Ricord's steps (though in this instance with some apparent hesitation) also admits the principle, states that he has witnessed but one case in which he thought syphilis had been so conveyed. How comes it, then, that a single observer, in a comparatively short space of time, should have been able to collect so many instances of its occurrence? The reason why those who admit that the fœtus may infect the mother have not found it to occur more frequently, I believe to be that they have looked for a wrong class of symptoms. The class in which any violent outbreak of secondary symptoms occurs is very small indeed, for the obvious reason that very few men, indeed, marry until a considerable period has elapsed since the primary disease. The symptoms which characterize the disease as derived from fœtal contagion are, for the most part, vague, of a late tertiary type, and very likely to be misinterpreted. The sufferers themselves often think them but trivial, and do not seek advice. In not a few of the cases in the table the mothers only came under my observation on account of their bringing syphilitic children for treatment. Some of the symptoms, excepting to a suspecting eye, and unless duly weighed in connexion with their attendant phenomena, would not have been ranked as syphilis. In another class of cases many surgeons would, probably, have refused credence to the patient's statement, and insisted that, at some former period, she must have had primary diseuse. Then, again, as to the number of cases collected, I may state that my field of observation, formerly at the Hospital for Skin Diseases, and latterly at the Metropolitan Free Hospital, has been very large as it regards this class of diseases. By these circumstances the discrepancy noted may, I think, be satisfactorily explained. The class is, I cannot feel a doubt, a large and very important one, and upon its right recognition will often depend the success or failure of surgical therapeutics.—*Med. Times and Gazette, Dec.* 20, 1856, *p.* 615, *and Jan.* 10, 1857, *p.* 31.

127.—*Opening Buboes by Caustic Potass.* By J. Turner, Esq., Bombay.—I have arrived at the conclusion, as far as the station of Poonah is concerned, that the best plan is, when suppuration has actually commenced, to bring the disease to a crisis, open, as far as matter can be detected by manipulation, by caustic potass. Thirty-six or forty-eight hours suffice for the slough to come away, when the subsequent treatment is that of a simple ulcer, healing as such by the application (on lint) of an opiate wash, or weak solution of sulphate of copper; a generous and varied diet, suitable to the wish of the patient, half or full bottle of beer, and, when considerable suppuration is going on, wine at night, in shape of negus; morphia, &c.

I never allow a bubo to be opened by knife, as sinuses so frequently result, and the constant opening and reopening, causing drain to the system and disgust to the patient, render him restless, irritable, and cachectic; and by reason of these I would, from the numerous sorry instances witnessed under the knife, strongly recommend the almost exclusive use of the potass, not only as being more satisfactory in its result to the surgeon, but that the constitution of the soldier is less undermined, and his services more speedily given to his corps.—*Med. Times and Gazette, Jan.* 3, 1857, *p.* 20.

128.—*New Remedy in Gonorrhœa.*—Professor SIGMUND, of Vienna, recommends, in place of the expensive and frequently adulterated or too-old balsam of copaiba and cubebs, rectified turpentine and the seeds of *Heracleum sphondylium*, an indigenous and active, though little employed drug.—*Buchner's Repert.—Med. Times and Gazette, Dec.* 20, 1856, *p.* 629.

129.—CASE OF GONORRHŒA OF THE NOSE.

By A. M. EDWARDS, Esq., Demonstrator of Anatomy in the University of Edinburgh.

A respectable widow, aged sixty-one, applied for relief at the New Town Dispensary, under the following circumstances:—Her whole face was swollen, especially the eyelids, nose, and upper lip. There was slight conjunctival congestion, and a small abscess pointed close to the left angle of the mouth. Her nose was extremely tender on pressure, the skin over it red, tense, and shining, with a few inflamed papillæ scattered over it. The upper lip was much enlarged, and its cutaneous surface excoriated, evidently from the irritating effect of a purulent fluid which flowed copiously from both nostrils. So tender were the parts that she scarcely ventured to wipe off this discharge, and kept her head hanging forwards so as to allow the matter to drip upon the floor. She described herself as much reduced in strength since the occurrence of the malady, which she accounted for by the fœtid odour of the discharge making her loathe all food. She came into the room supported on the arm of another woman. The patient's extreme emaciation and general appearance led me at first to suspect malignant disease, and, from the treatment prescribed, her former medical advisers seem to have been of that opinion also; but by dint of cross-examination, I ascertained that about six months previous to my seeing her she had been paid a visit by her son; he was at that time suffering from gonorrhœa, and he used a pocket-handkerchief to suspend his testicles. He left this handkerchief lying about his room, and she picked it up, and used it for her nose for two or three days. On the fifth day her left nostril felt hot, dry, and itchy, and soon began to discharge yellow matter; soon after the right nostril became similarly affected, and her eyes slightly inflamed. These symptoms were accompanied by headache, pains in the limbs, and shivering. She imagined at first she was suffering from a severe influenza; but finding the nose getting daily into a more disgusting condition, she consulted medical men, who prescribed various remedies.

This history being ascertained, the indications for treatment were clear. I opened the small abscess, and ordered glycerine for the sore, upper lip, and edges of the nostrils, which were to be syringed frequently with warm water; citrate of iron and quinine, in pills of two grains, thrice a day. Under this simple treatment the symptoms at once yielded. and a little myrrh lotion injected into the nostrils when the inflammation was abated stopped the discharge.

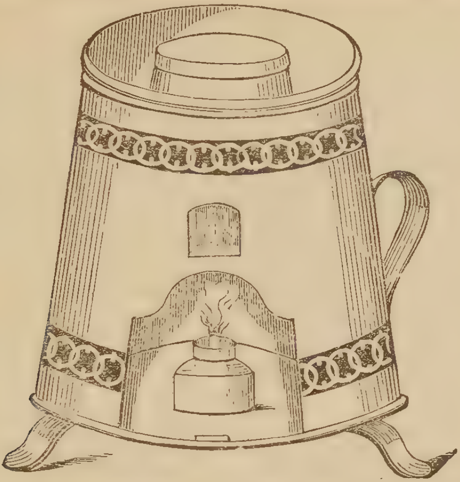
The son still suffers from a gleet.

Considering the frequent occurrence of gonorrhœa, and the filthy habits of many of the lower classes, it is surprising such cases as the above are not more frequent; but though I have met frequently with cases of conjunctival gonorrhœa, and now and then a purulent discharge from the nasal mucous membrane of patients with a gonorrhœa on them at the time, I never met with one produced in the nose of a second person, and before I saw this patient I had no idea such a cause could produce such serious effects.—*Lancet, April* 4, 1857, *p.* 342.

130.—IMPROVED LAMP FOR CALOMEL FUMIGATION IN THE TREATMENT OF SYPHILIS.

[Mr. Henry Lee, in a paper which will be found in the 'Transactions of the Medico-Chirurgical Society,' has shown the greater advantages which are obtainable by the application of calomel vapour to the surface of the body, over any other form of mercurial application, especially as compared with the old plan of mercurial fumigation.]

Mr. Lee, in his experiments, found that the efficacy of the calomel-fumes was considerably enhanced when combined with the vapour of hot water, and that the combination of the two vapours acted more readily than when the calomel was alone used. For this purpose two lamps were used at first,—one to volatilise the calomel, the other for the purpose of boiling water; for it was necessary to obtain a greater heat than the boiling-point of water to volatilise the calomel. The two lamps were found to answer the purpose most efficiently, but the cost of such apparatus placed it beyond the means of many who might otherwise be willing to adopt the treatment; and it was therefore desirable, if the efficacy of the proposal was not interfered with, that the combination of the two effects should be produced by one lamp, thus economising the spirit consumed and rendering the apparatus cheaper. We can now present to our readers a lamp which has been perfected for this purpose by Mr. Blaise, instrument-maker, of St. James's-street, from a proposal by Mr. Pollock, of St. George's Hospital, and with the consent of Mr. H. Lee. It consists of a circular perforated stand with a handle, and an opening in front which permits of the drawing out of a small spirit-lamp with a large wick, which, when lit, throws the flame on a circular saucer containing water, with a perforated concavity holding a smaller hollow metal plate or central



saucer, upon which is placed the calomel. The effect of the heat is to boil the water and volatilise the calomel. The drawing gives a correct and faithful idea of the lamp, which rests upon three feet. The large saucer is made of a single piece of metal, and is lined with galvanised copper. Ten grains of calomel, the dose to be volatilised, placed on the central saucer, require about fifteen minutes to be converted entirely into vapour, after the spirit-lamp is lighted. The quantity of spirit necessary to obtain this object is measured by the tin cap which fits the lamp. Hot water placed in the outer saucer will evaporate in the time required to volatilise the calomel.

The lamp may be used every night or every other night. The patient sits naked on a chair, surrounded by a cloak, with the lamp lighted under the chair or between the legs.

The advantages of the combination of the calomel-vapour and steam appear very decided. The action of the calomel-vapour alone might suffice in the treatment of syphilitic diseases; but its action is rendered in many respects so much more efficient by the addition of hot steam, that there can be no choice between the two plans of treatment. More than this: Mr. Pollock has suggested that the heat of the steam is absolutely necessary to enable the patient to sit naked in a room, with any degree of comfort, with merely a cloak thrown loosely over the body, while undergoing the fumigation for a quarter of an hour; otherwise the patient is cold and uncomfortable. By the addition of the hot vapour of water the action of the skin is very much increased and the patient's comfort materially added to. It will be observed, too, that as the fumes of the calomel are surrounded by the vapour from the water during the volatilisation, they are, in all probability, more effectually mingled with the vapour-cloud rising from the water, and more readily and surely carried and applied to the surface of the body, than under the plan of using two lamps. This lamp is now being used by Mr. Lee in the Lock Hospital. and by Mr. Pollock at St. George's, and we hope shortly to be able to give the results of several cases under treatment. At this moment there is a very marked case of tertiary syphilis in a female in King's College Hospital, which Mr. Lee was good enough to show us, and the effects of this plan of treatment have in a very short space of time, proved most gratifying.

Mr. Pollock finds that the lamp may be made useful in private practice for sulphur fumigation, as well as for the calomel treatment: and it may, perhaps, also be adapted for the volatilisation of other substances, such as iodine, &c.

The lamp and cloak are to be obtained at Messrs Whicker and Blaise's, St. James's-street, at a moderate price.—*Lancet, March* 14, 1857, *p.* 262.

131.—*Mercurial Fumigation.* By W. MATTHEWS, Esq.—[The following is the description of the lamp lately constructed by Mr. Matthews, for the purpose of mercurial fumigation.]

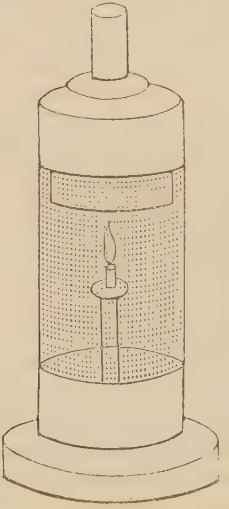


Fig. 1.

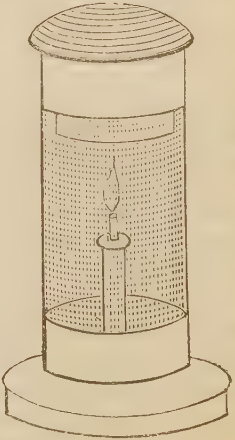


Fig. 2.

One lamp is used for water, the other for mercurial vapour, and they can be used together or separately.

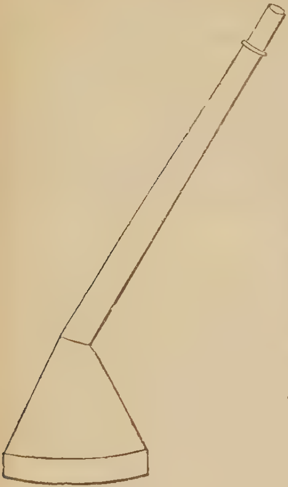


Fig. 1 represents the vapour bath, water being placed in the cylinder above the lamp.

Fig. 2 shows the lamp used for mercurial fumigation, the mercury being placed on the plate *a*, when used with funnel shown in Fig. 3 for local application to the throat or any particular part of the body. If the funnel be not used the mercury is placed on the top plate seen in Fig. 2.

Fig. 3 merely represents the funnel.—*Med. Times and Gazette, Jan.* 3, 1857, *p.* 21.

132.—ON THE USE OF A SOLUTION OF CHLORIDE OF ZINC IN PROFUSE SALIVATION.

By Thomas William Nunn, Esq., Lecturer on Pathological Anatomy at the Middlesex Hospital, &c.

[The marked fœtor of the breath, associated with an inflammatory condition of the buccal mucous membrane generally, is almost invariably found during the specific action of mercury on the system, and is recognized under the name of "mercurial fœtor," as if this were the only cause which could give rise to it.]

Now a fœtor, not differing from the so-called "mercurial fœtor," except in degree, is perceptible, under ordinary circumstances, whenever the salivary and buccal membranes are involved in inflammation —in a common swelled face from a gum-boil, or in severe mumps, or, in what is rarer, suppurative inflammation of the parotid, or of the submaxillary gland the same fœtor is to be detected; the same again, but more intense, "*plus*" the odour of gangrenous tissue in that terrible disease cancrum oris. It seems probable, therefore, that the fœtor in question is due to the rapid decomposition of the organic elements of the saliva, and of the buccal mucus, induced by the contact of these fluids with the inflamed surface; a decomposition analogous to that occurring in the urine when in contact with an inflamed bladder, or rather with its deteriorated secretion. A catalytic agent is provided by the inflamed membrane in either case. Under conditions of inflammation, the proportion of animal matters in the saliva, and in the buccal mucus being, doubtless, greater than normal; and while these organic elements are thus excessive in quantity, they are, perhaps, more than usually prone to decay. It would occupy much space, though not unprofitably, to discuss fully the changes that occur in the secretions of the mouth—secretions which contain a peculiar animal ferment (?)—ptyaline, and, therefore, may be supposed to supply the conditions for complicated chemical changes. The object of this communication is rather to describe a method of instantaneously and safely removing the fœtor of the breath accompanying certain inflammatory states of the gums.

It consists simply in applying a strong solution of chloride of zinc, with a soft brush, to the gums, and to the spaces between the teeth: the brush should be made of *goat hair;* the solution, of a strength produced by mixing one drachm of Burnett's fluid (*i.e.* a concentrated solution of chloride of zinc) with seven drachms of distilled water.

During the process the mouth should be repeatedly washed with warm or cold water, the patient being prevented from swallowing a single drop. The solution should be applied by the hand of the medical attendant only; as, although the remedy is a perfectly safe one, it is not one that it is advisable to commit to those ignorant of its properties. The frequency of the applications must be determined by circumstances. There need be no apprehension that the brush will cause the gums to bleed excessively, the solution acting at once as a styptic to the abraded vessels.

The solution, on contact with the rotting epithelial exudation, and special salivary matters, immediately enters into combination with these, and an inodorous product results, which the brush removes, while at the same time it powerfully constringes the enlarged vessels of the papillæ of the gums and the rest of the alveolar mucous membrane, and thus tends to restore a healthy state of the local circulation.

No one, it is presumed, believes that the inflamed condition of the gums in any way assists the mercury in its desired effect on the system generally, therefore, an objection to relieving this inflamed condition is not anticipated, while there is good ground for suspecting that the inhalation of air loaded with the fœtid volatile products of the buccal cavity most materially tends to injure the patient.

The action of chloride of zinc on living animal substances deserves to be more fully studied. There seems to be a hesitation in employing it from the notion prevalent that the action of the solution of the chloride has the same corrosive power that the salt in its solid form possesses. The disorganizing properties of the solid chloride in a great measure depends on its attraction for water, of which it robs the tissues, to their destruction. The strongest solution can have no effect of this kind, it is evident; it has no solvent power similar to that of caustic potassa. One has heard of excisemen who, in their inspection of soap-works, have been so unfortunate as to stumble (?) into reservoirs of caustic alkali, and to have totally disappeared with the exception of their coat buttons,—having been dissolved. An animal body would be, on the contrary, indefinitely preserved in a solution of chloride of zinc. The action of a saturated solution seems to be limited to the coagulation of the layer of albuminous materials with which it comes in contact, unless it be left on the part for a long time, in which case it would of course soak through and act on the stratum below in a similar manner.—*Med. Times and Gazette, Feb.* 28, 1857, *p.* 210.

133.—*Chlorate of Potass in Mercurial Salivation.*—Several trials made by M. Ricord exhibit the power of this substance not only in checking mercurial salivation, after the suspension of the mercury, but even when this is continued and increased. Of still greater importance is its prophylactic agency; for in a considerable number of patients, some of whom were extremely susceptible to mercurialization, who took the chlorate from the commencement of the course, no salivation at all occurred.—*Bull. de Thérap.*—*Med. Times and Gazette, Nov.* 22, 1856, *p.* 528.

134.—ON SYPHILIZATION.

By Dr. Wilhelm Boeck, Professor of Medicine at the University of Norway.

[During a visit paid by the Editor of the 'Dublin Quarterly Journal' to Stockholm last autumn, he was very much surprised at seeing some cases of secondary syphilis under the care of Professor Malmsten cured by the syphilization treatment, after having obstinately resisted other therapeutic means. On the Editor's return home, he received the following Essay from Dr. Boeck :]

It is a fact well known to all, that M. Auzias Turenne, in trying to induce syphilis in animals, observed, that they after a number of inoculations became, as it were, proof against the syphilitic virus. He called the state which was induced in the body by the name of syphilization, and M. Sperino, being made acquainted with the observations of M. Auzias, immediately adopted the idea of using a continued inoculation with the virus in order to cure syphilis, an idea which was so speedily realized, that it seems as if both had at the same time used syphilization in men. At first the thing looked so absurd, that all concerning syphilization was considered as mere fancy; most did not find it worth thinking of, and thought right to reject it only from theoretical reasons, as if experimenting for one's self, or even looking at the experiments of others, would make one an accomplice in spreading fantastic dreams,—such being the opinion generally held as to the doctrine of M. Auzias Turenne. Now the matter has changed; medical men have already ventured, in more places than one, to repeat the experiments of M. Auzias; and it has been found that what was termed nonsense was only the plain truth; a new proof has been given, that it is better to be cautious in judging of anything *a priori*, as Nature does not always follow the way that we point out to her in our study—on the contrary, she wills that we shall find out her ways, however difficult it may be for us.

After the facts given to the scientific world from different places, especially from within the Scandinavian kingdom, there can be no doubt that the state which M. Auzias Turenne has named "syphilization" really exists; therefore, I am sure that I shall obtain some moments of attention while I take the liberty of communicating the results which I have obtained during the last four years, in using syphilization to cure syphilis, in order that, by exchanging ideas and experiences, we may advance this important matter.

I repeat, "to cure syphilis;" for this alone do I consider syphilization, at least at this moment, in general to be allowable; and by departing from this ground we are entering upon that of experiment, to which I shall afterwards allude. The author at first meant to use it as a prophylactic method, against which, of course, a general opposition arose, but, let me add at once, he has given up this eccentric idea a long time ago.

As is often the case, one only saw the dark side of the question,—the chief points of it were forgotten in the absurd idea of preserving everybody from an illness which is in general only for those who attract it to themselves; it was forgotten that the system, after a number of inoculations with the syphilitic virus, becomes proof to it; in fact, persons had been to that degree irritated against the said abuse of syphilization, that they did not think of the physiological side of the inquiry, which was so much the more extraordinary, as it was not here the question of any theory, but of a fact, of which everybody might convince himself. It can be readily shown, that after a number of inoculations, it is at length impossible to produce any effect,—the same result then ensues, whether the inoculation be made with the syphilitic virus or with water. The organism after such a number of inoculations seems to have acquired the same relation to syphilis as it does to vaccine lymph after a single inoculation with this latter poison. This fact has been proved in more than a hundred persons, who have been treated here by syphilization, so that I must consider it unnecessary to enter more closely upon that matter. This immunity takes place gradually, the ulcers being smaller after every succeeding inoculation, until at length the pustules are quite abortive, or the result is an absolutely negative one. This diminishing by degrees may suffer some modifications, on which I shall, however, not dwell here; I have spoken of them before. The result, complete immunity, always will take place, it will take place in all individuals—this is a rule without exception. The immunity may take place earlier or later, the susceptibility for the syphilitic virus being different in different individuals; and besides, I suppose the intensity of the syphilitic poison to be different—a circumstance that will occasion a considerable difference in the time necessary to produce the immunity.

In my opinion, the immunity is the chief point of the matter. It is a great physiological fact, that the syphilitic virus, by continued inoculation, annihilates itself, for this leads us to the result, that by syphilization we have entered upon a law of nature which can scarcely exist for the syphilitic poison alone; other animal poisons probably must obey the same law; we must pursue the hint here given to us,—the consequences may lead us far forward, but for the present we must hold to the fact that we have before us, that we have got possession of.

However, syphilization is not only of physiological importance and interest; it is of yet more consequence to the practical physician; as the symptoms of syphilis existing at the beginning of syphilization vanish away during its progress. This fact is quite as certain as the first one; so it is beyond doubt that syphilization *can* be used for curing syphilis; the question is, whether it *ought* to be so used.

It is evident, that it ought to be used only if its effects are in any way preferable to the remedies hitherto employed against this disease, and if, at the same time that it causes the syphilitic phenomena to disappear, it does no harm to the constitution. I shall now shortly examine the remedies hitherto known against syphilis, beginning with mercury.

Every physician of any experience must have observed that mercury is far from being a satisfactory remedy. I will not speak about the mercurial treatment being disagreeable to the patient, especially when those preparations are used which produce salivation; it is so inconvenient to the sick person, that he is obliged to be within doors, to be in bed; that after the treatment he is very sensible to cold and humid air:—all this would not be worth mentioning if mercury was a certain remedy and harmless to the constitution, but this is not the case. Mercury is so far from being a certain cure, that, on the contrary, it is a doubtful question whether mercury is at all a remedy for syphilis. This doubt is no new one; it is not brought forward just now in order to support another line of treatment. Authorities on the disease have long held it, I shall only name Ricord and Cullerier. But let us not protect ourselves with authorities; let us hold to that which every day's experience proves; for instance, let us see what is the proportion of relapses in our hospitals at Christiania. By closely examining the reports, we have found that the number of relapses is about 25 per cent. of the whole number of the individuals treated:—if now we remember that a greater number of relapses do not take place until after some years; that many of these relapses never come to be treated in this hospital; that very often we find syphilis developed to its highest degree in children whose parents have been treated with mercury, and are apparently in good health; that we often find relapses in the form of osseous affections in the surgical wards, of apoplexies and incomplete and complete paralysis in the medical wards of the hospital, and in the form of mental maladies in our asylum for the insane, then I should think the per-centage number will be a very large one. I might very well add here the many scrofulous and tuberculous affections, which, in my opinion, certainly originate in syphilis,—nevertheless, I do not mean to say, that I think syphilis to be exclusively the cause of these maladies; but, by doing so, I should enter on debateable ground, which is not at all necessary for proving that mercury never produces the result we should expect from a remedy, that very often it is quite the opposite of a remedy, that it is a pernicious, a dreaded agent.

At different times other medicines have been recommended against syphilis, for the evils attendant on the use of mercury have been at all times well known; but mercury has been always again returned to, as, notwithstanding its imperfections, it has the power, in the greatest number of cases, of causing the syphilitic phenomena to disappear for the moment; and thus it was the best remedy we knew of.

If it be evident, as I think it is, that the remedies hitherto used against syphilis are uncertain, and even pernicious, then it is not only allowable—it is our duty—to try the new one that is offered to us. Considering the place that I hold in this University, I thought it my duty to try syphilization, so much the more as I did not find the idea so very unreasonable; and as, after the observations made during the first two years, especially by M. Sperino, I considered it certain that the method was by no means a dangerous one.

To me the only question was, in what cases syphilization might be used. I have already mentioned that I always thought *prophylactic* syphilization to be an absurdity, therefore, I shall not dwell any longer on it. The question is, whether syphilization ought to be used in all cases where syphilis exists. This question is easily answered. I cannot predicate with certainty if all those who get primary syphilis will get constitutional disease; the simple chancre is not in general accompanied by any constitutional affection; the Hunterian one is certainly a consequence of constitutional syphilis, but we may easily deceive ourselves in respect to the induration; therefore, I never use syphilization where there is merely primary syphilis; it is not until the constitutional symptoms have appeared that I consider this method allowable, for then I am convinced that I do not introduce anything into the organism but what is there before. I cannot double a malady already present, so I am quite certain not to do any harm to the patient.

Syphilization, however, is not used with equal success against all cases of constitutional syphilis; we must discriminate two classes of cases,—those which have not been before treated, at least not with mercury; and those which have been mercurialized.

In the first class of cases—those which have not been treated with mercury—there may be some difference, according to the different phenomena that take place, the duration of the malady, the patient's age, and, in children, their having an inherited or an acquired syphilis; but one point never alters—the progress of syphilization will be regular, the syphilitic phenomena will vanish away by-and-by, and if even now and then there appear new eruptions, new phenomena, one may quietly shut his eyes and go on inoculating; immunity *will* take place. and recovery be attained with mathematical certainty.

This may be the fit place for mentioning shortly how I produce syphilization. Without any other preparation than a bath, or in my private practice even without this, I apply on each thigh, and on each arm, or on the sides only, three inoculations in every one of those places, with matter taken from a primary ulcer, or from an artificially produced one in a person who has been syphilized. I choose the first-named places for those who are lying in the hospital, but I inoculate the sides of those who. during syphilization, are going out attending to their business; however, I must add, that I never confine my inoculations exclusively to the sides; if they do not prove effectual there, I apply them on the thighs, on which we shall almost always find the ulcers to be larger, deeper, and of a longer duration; therefore, I think this place the best, and never fail inoculating there. Every third day I inoculate anew; as long as the last inoculations produce pustules, I take the matter from these. In some cases I have always tried to take the virus from the first-made inoculations, thinking to find there the strongest matter, and thereby, perhaps, be able to achieve the cure in less time; but the cases in which the treatment has been accomplished in this manner are so few that I should not venture to draw deductions from them. In syphilized children I have only applied one inoculation on each thigh, and generally also on each side every third day, or perhaps at longer intervals. The ulcerations produced in this manner may occasionally become phagedenic in grown-up persons; many wounds may be united into one, and form a large ulcerating surface; this, however, does not signify in the least, provided the treatment be continued without being alarmed, the inoculations are a certain remedy against the phagedenic ulceration. In children the ulcers are generally so small as not to cause any inconvenience; it is only in cases which have been mercurialized before, that I have sometimes seen the artificial ulcerations enlarge, yet never to an alarming degree.

In some instances the inoculated person becomes proof to one sort of virus; I then take the matter for inoculation from another, preferring a case which has had a different origin; this then proves effectual. But sometimes they become proof to this also, and I then seek for a third source; and thus I go on as long as any matter at all will operate.

Moreover, it is worth noticing that immunity does not occur, and the syphilitic phenomena do not vanish earlier, in children than in grown-up persons. The time necessary to produce immunity is about three months; however, it depends upon the number of inoculations that may be employed; upon the symptoms that have taken place; and in children it seems to depend upon their syphilis having been acquired or inherited; the quality of the virus even may not be without influence.

When immunity is attained, the syphilitic phenomena generally vanish; however, should this not be the case, it should cause no uneasiness, as they will certainly vanish within a short time, without any remedy being used.

It is not uncommonly the case, that during syphilization a new eruption takes place; but this always exhibits symptoms of the same nature as were observed at the beginning of the process of syphilization. These eruptions need not cause any anxiety; the operator may quietly go on inoculating, and things will proceed as in other cases. One phenomina that I have often seen develop itself under syphilization is iritis; this has been very intense in some cases, but I do not make it the subject of any special treatment, either antiphlogistic or derivative, and the result has hitherto been always favourable.

The syphilitic poison does not run a rapid course, as was known a long time before we heard anything of syphilization; we often see the constitutional symptoms not to show themselves until after some months; therefore, there is nothing astonishing in the fact that the curative results of inoculation do not show themselves until after some time.

It also happens, that even after the immunity has taken place, new excoriations or exudations on the pituitous membrane, or mucous tuberculæ on the scrotum appear; I leave these cases to themselves; in some weeks they will vanish away, and hitherto I never saw any return of them. It is well worth noticing, that it was only in individuals treated during the last year, I have seen this late evolution of new phenomena: thus it seems as if the quality of the virus had some influence.

The treatment by means of syphilization of those who have not been mercurialized generally requires three or four months. This seems to be a long time; but if it is so, we have then reason to believe, that the dyscrasy exists no longer in the body; that the recovery is complete. If time shows us that the children of those who have been treated in this manner are not syphilitic, then I should say the time is very short.

Even if we admit that it is uncertain whether the dyscrasy is extinguished by this method, we have, notwithstanding, reason to believe that the relapses cannot be frequent; and if, therefore, we make a calculation of the time required for mercurial treatment and the period occupied by the following relapses, it might be proved that the syphilization mode of treatment could scarcely be expected to be shorter. If it be argued that we should use the mercurial treatment because we do not know with certainty how the case will be after syphilization, such reasoning is incomprehensible to me. It would be quite right if mercury was a *good and praiseworthy* remedy, but I do not think that any physician in Scandinavia would say, with M. Ricord, that in from four to six weeks he heals every constitutional syphilis, that he never sees any relapses, and, still less, any paralyses, mental maladies, &c. If I am right in what I have said about the mercurial treatment, then I should think, that mercury, as against syphilis, is of such a pernicious effect, we should scarcely be able to find a remedy that could be worse; so I do not understand why we should hesitate any longer to try another remedy, which has already given us astonishing results.

In my opinion, it would be wrong to give a hundredth part of a grain of mercury to a syphilitic person who had not been before mercurialized.

It is a different case when mercury has been already used: here we have not only syphilis to conquer, we have syphilis allied to mercury, and in fact, disease and remedy seem to have entered into a combination so very intimate that it is extremely difficult to dissolve it. Here syphilization does not operate with the same mathematical certainty; generally we do not gain our end by using syphilization alone; we often are obliged to have recourse to iodine; therefore we must remember that the time required for the treatment is almost always longer, and that we are never secured from relapses. Respecting these, they have been in general of no importance in comparison to the affection against which syphilization was used at first; immunity generally ensues after a small number of inoculations, and recovery will be attained in much less time than that which is necessary for the first treatment.

But if even by syphilization alone we cannot effect a cure in all cases, it is nevertheless an indispensable remedy. Patients who have been nearly destroyed by syphilis and mercury may be restored by it to health.

The cases belonging to this class may present very different aspects, and the effect of syphilization on them of course is also different; I, therefore, think the best way to give my view of the matter is to arrange them in separate groups, viz:—

1st. The early constitutional cases recently treated with mercury, in which the same symptoms have reappeared. Here syphilization will in some cases produce as certain an effect as in cases not treated before, but we oftener find some irregularity; the phenomena vanish and return again; that which I have said takes place in the individuals not mercurialized is repeated here, namely, it is always the same forms which existed at the beginning of the syphilization that return.

2nd. The affection may be still confined to the cutaneous system and the pituitous membranes, but the tubercular forms may be predominant, ulcerations on mucous membranes may go deeper, or the affection may be in the subcutaneous areolar tissue; we may even have the *tubercular serpigenous syphilide* (Radesyge). These affections are more slowly acted upon. The reason for this may partly be found in the fact, that these forms are often rather of old standing; mercurial treatment, iodine, &c., have been used against them, and we also often see bad forms show themselves within a year after the primary affection; this seems to depend on individual constitution, for it often has no relation to the quantity of mercury, or the care taken of the patient during the treatment.

If in these cases new eruptions come out during syphilization, we shall always find them to be more superficial than the earlier affection, if even they have the same form as that which existed at the beginning of the syphilization treatment. It happens in these cases especially, that the inoculations, after a small number of them have been made, do not produce any effect, then we must give iodine, after which we shall again have larger pustules and ulcers.

3rd. Affections of the osseous system; here syphilization hardly ever seems to produce any effect; but when iodine has been used earlier, producing results of only a short duration, then syphilization united with iodine seems to relieve the nocturnal pains more certainly, but osseous tumours remain unaltered by syphilization.

4th. Affections of the nervous system—hyperæsthesia and incomplete and complete paralysis, may occur: first, in combination with other syphilitic symptoms; and in those cases I have seen them diminish under the influence of syphilization; secondly, they may be the only phenomena left as the result of the mercurials used against the primary syphilis; and under these circumstances we see little or no effect from syphilization; however, I must observe, that all the cases of that sort which I have hitherto treated have been of old standing, and have for a long time been treated with iodine, &c. Time will prove whether syphilization might prevent the paralysis, if it were employed immediately after the attacks of giddiness or apoplexy that generally usher in the nervous affection; but it is certain that syphilization under these circumstances ought not to be left untried. Even when the paralysis is already existing, I consider it a duty to try inoculation, for if the syphilitic dyscrasy is really extinguished thereby, we may, perhaps, by syphilization prevent the paralysis from proceeding any further. It is a fact that, in the cases wherein I have employed this treatment, the state has never been made worse; therefore, I shall not fail in similar cases to repeat the same treatment.

5th. Mental maladies finally may be the result of the mercurial treatment. I have had no opportunity of employing syphilization in such cases, but I consider it well worth trying. After what I have said here, it will be observed, that syphilization, even if mercury has been used before, is of great use; however, it must be understood that these are not the cases for which syphilization is principally to be employed. Syphilis reacts upon syphilis, but syphilis does not react upon mercury. The idea that syphilization should be the last refuge seems to me quite as if quina should not be given in the beginning of an intermittent, but that the system should be first injured by different other medicines, and then quina given afterwards.

As the result of the great many observations made with syphilization, it seems sufficiently proved, that the syphilitic virus heals constitutional syphilis, and that it cures the malady without doing any harm whatever to the organism; on the contrary, we see that the uneasiness, the rheumatic pains which often accompany constitutional syphilis, vanish under continued inoculations.

The immediate effect of syphilization upon the organism is generally also very favourable, but there are some who have thought that it may, perhaps, operate perniciously in future time. To this I have only to say, that I can show many individuals discharged from hospital more than three years ago, who have remained in uninterrupted good health, and that in not one of the persons treated in this manner, can I point out any unfortunate result whatever which could be ascribed to syphilization.

The problem, that I had, from the first, laid down for myself, to try the influence of syphilization upon syphilis, I have tried to solve in the manner now mentioned. In more than a hundred cases it has been proved that syphilis cures syphilis; it has been proved possible to make the syphilitic virus circulate through all the blood without causing any pernicious effect upon the organism. Is it possible to make this last observation useful in any other direction? My colleague, Mr. Danielssen, on seeing, three years ago, the results which I had obtained by using syphilization, conjectured, that perhaps it might be possible to cure the Elephantiasis Græcorum in this manner; I confess, that I had then no mind to entertain that idea, and I have been equally unbelieving respecting the information we have received about curing cancer by syphilization. I have, however, lately made experiments by mixing the syphilitic virus with the vaccine lymph with which I inoculated unvaccinated children who suffered from a constitutional syphilis. After these inoculations, syphilitic pustules have appeared; and in order to convince myself whether the vaccine matter had had any influence at all, I have inoculated the same children eight days afterwards with unmixed vaccine, when quite characteristic vaccine pustules have appeared. By these experiments it is sufficiently proved, that the syphilitic virus destroys the vaccine; whether this same virus may be able to conquer any other poison, any dyscrasy existing in the body, is another question, that we certainly dare not *a priori* answer in the negative; and now, knowing that we may bring the syphilitic poison into the body without running the risk of, in the least degree, injuring the organism, there are cases in which it is allowable to make the experiment. I am at present making some few trials, viz., in a chronic eczema, and with an epithelium, and I am happy to say that both of these patients are much better.

However, I will not yet judge anything from this, for, if continued experiments will confirm that the syphilitic virus has the power of conquering the cancerous one, a new view would be opened to us in pathology of immense practical importance; we dare not think of it till after a great many experiments made with the greatest possible exactitude.

Although the thus obtained results are to me only an encouragement to make new experiments, I could not, however, omit mentioning my view of syphilization; for if others will make experiments in the same direction, we shall sooner come to certain results.

If, finally, I were to comprehend, in a few words, my opinion about syphilization used as a curative remedy, I should say:—

1st. Syphilization is undoubtedly useful against syphilis; it is the only certain remedy that we know; and it is not pernicious to the organism: mercury, therefore, ought to be banished as a curative remedy.

2nd. Syphilization is not so certainly useful against *mercurialized syphilis*, but it ought always to be tried; it often does cure it entirely, and it at least does not fail to do some good in the greatest number of cases.

3rd. The application of syphilization against other maladies than syphilis ought to be tried with the greatest possible care and exact observation.—*Dublin Quarterly Journal, Feb.* 1857, *p.* 77.

[The Reviewer of Dr. Boeck's works on Syphilization in the 'Medico-Chirurgical Review, says:—]

We think that the advocates of syphilization have established a claim on the profession to a fair trial of their system. It is evident that its employment is not fraught with danger, as is the case with so many remedies proposed from time to time; and the investigation of the subject seems to open up a new field for the further study of one of the most malignant and most lasting and destructive poisons that affect the human frame.—*British and For. Med. Review, April* 1857, *p.* 428.

135.—ON THE TRUE VALUE OF INOCULATION AS A MEANS OF DIAGNOSIS OF SYPHILIS.

By Dr. WILLIAM HENRY PORTER, Professor of Surgery in the Royal College of Surgeons, Ireland, &c.

Lues venerea is obviously a blood disease; that is, it is occasioned by the presence within the blood of some deleterious or unwholesome principle, which interferes with healthy nutrition, and is conventionally, though, perhaps, in strictness of language, incorrectly termed a poison There are many such; and although there exists amongst them a sufficient discrepancy of symptom, progress, and termination, to constitute each a distinct and separate disease; and although they are known and spoken of in familiar language under totally different names, there runs throughout them (except in this instance of lues) such a striking pathological resemblance, as to establish an evident relationship. Thus, in being introduced into the system, each poison has its own proper and peculiar vehicle—it may be the atmospheric air, or pus, or blood, or the saliva or other secretion of an animal—but it has its own, has only one, and never deviates from the rule. When fairly introduced, a well-defined, stated period is always observed to intervene before the development of the symptoms, and this with a regularity that scarcely ever knows a deviation, so that in the affections produced by artificial inoculation, we know and are prepared for an exact and undeviating order in the time of the appearance and progress of every symptom. Again, all other poisons seem to create or cause within the constitution some definite attempt to eliminate and expel them, either by localization or by some evacuation, and the effort is usually accompanied by more or less of fever; each species producing its own particular symptom, its own fever, its own inflammation, or its own eruption, but all tending to one common result. These efforts are generally periodic and critical; that is, the symptoms last a given time, regularly defined in each, and terminate at a particular period, either in the removal of the disease, or the dissolution of the patient; and many of them are remarkable for indemnifying the person so attacked from any future illness of a similar nature. Now, in no one respect do the pathological characters and conditions of lues venerea correspond with these phenomena. It was at one time the prevailing opinion that its poison could be conveyed in so many vehicles as to render the most innocent conversations insecure; and even now, when these very general apprehensions are no longer entertained, it seems by no means certain that the contaminating principle is confined to one vehicle and one secretion. Again, there never has been any regular interval observed between the introduction of the poison and the development of its effects. Further, there is often no attempt at its elimination at all, either by the formation of a bubo, or by eruption, or by fever; and if there should be some such attempt in the appearance of an eruption, it is not limited or restricted to any one form; it may be papular, or pustular, or scaly, or, in a word, may consist of any form or species, from the simplest pimple to the foul and abominable rupia. And there is nothing periodic or critical in the character of the disease: it never wears itself out; it never recovers or subsides spontaneously; and although the virulence of the disease may abate, and the symptoms disappear, it leaves the patient as deeply poisoned himself, and as capable of conveying the virus to others, as he was before. Finally, one, or any number of attacks of lues, will not protect from future contamination; nay, there is reason to believe a person may contract a new disease whilst yet labouring under the effects of an old one; and it may be further insisted on, as perhaps a greater and more striking differential character than any above enumerated, that it is the only blood disease that has been observed to affect the unborn infant, and be thus transmitted from the parent to the offspring. If, then, lues is obedient to any laws, they must be proper and peculiar to itself; they bear no analogy to, and admit of no identification with, those of any other disease; and if a knowledge of them is to be acquired, it must be by studying every fact and every feature of its natural history, each by itself, step by step, and symptom by symptom, without expecting or even hoping for assistance from any extraneous source.

And now, in the commencement of our inquiry, the first difficulty we have to cope with is one that does not, and perhaps could not, exist with any other blood disease whatever. Can it be the case that the contaminating principle by which this foul disease is communicated from one individual to another, being contained within purulent matter formed as the result of such disease, that all this matter is not equally infectious; nay, that some is not only pure and innocuous and inoffensive, but that, the older the disease, and the more thoroughly tainted the whole system, the more harmless the discharge secreted by a sore? The answer to this question is curious and interesting, as contrasting syphilis with all other similar affections; if it assists in unravelling some of the intricacies, and removing some of the obscurity, with which its pathology has been hitherto defaced.

[The only legitimate conclusion which has been arrived at as yet, is, that a chancre cannot be produced in a man already tainted with secondary syphilis, by the inoculation of matter taken from one of his own sores. For nearly half a century the subject was allowed to rest, and in this condition it was left by John Hunter, when it was taken up by Ricord.]

His view may, I think, be simply and fairly stated thus, viz:—The essential characteristic of the disease is ulceration—it produces sores at all times and all stages; but although purulent matter is confessedly the principal vehicle by which the poison may be propagated, it is only during a very short and limited time that its powers of contamination exist in perfection; it is only during the first few days of the existence of the chancre, or primary sore, that the matter of syphilis is infectious. Thus it appears that every syphilitic symptom has two remarkable stages: one, of advancement to its state of maturation or perfection; the other, of decline: and it further seems to be confirmed by Ricord's experiments, that the chancre is only infectious during the first of these, namely, from the first appearance of the sore to the period of its maturation; and that subsequently to this stage it loses its infecting quality, and may be inoculated with impunity.

I have searched with the utmost diligence through the entire of his work, and I find that his experiments were in every instance, like those of Hunter, performed on the individuals themselves; and in no case is there even reason to infer that the matter introduced by inoculation into one subject had been taken from another. This limits the universality of the conclusion very materially, for in reality it proves nothing of what might have happened had the matter been taken from a stranger; and in establishing (as I concede it does) that if the pus of a recent chancre be inserted into another part of the same man, it will produce a chancre, but if the sore happens to be an old one, it will not, it goes as far as a logical influence will warrant. Let us now examine the question in this aspect.

I believe if there is any one circumstance connected with the venereal disease established by observation and experience, it is, that if a tainted mother has a pocky child, she may tend and suckle that child without the slightest risk of being inoculated by it, but if she gives it out to another woman to be nursed, this latter will most certainly be infected. This proves that there are some conditions which refuse the reception of an infection which would be taken by another. "For a long period back," said the late Mr. Hewson (an unquestionable authority on venereal), "I have been in the habit of noting the cases of many married women, who for a succession of years have been attending the Meath Hospital, bearing pocky children, and repeatedly subject to secondary chancres, and yet, when I have examined the husbands, I have not been able to trace a symptom of lues, either local or constitutional. From these observations, if confirmed by the experience of others, we might, perhaps, infer that the same stock of syphilitic poison does not infect the same individual more than once, or, if reconveyed to him, that it is innoxious." Again, to follow this train of observation farther, I find it stated in the late Professor Colles' admirable work:—"It is a curious fact that I have never witnessed, nor ever heard, of an instance in which a child, deriving the infection of syphilis from its parents, has caused an ulceration in the breast of its mother." And in another place:—"Although among these secondary symptoms some raised ulcers shall fix upon the external pudenda of the wife, yet the husband shall rarely suffer from these."

This law may be thus shortly expressed, that *the infection of syphilis never returns upon itself, or recontaminates the source from which it had been derived.*

When a chancre is contracted, it remains for a time a perfectly local sore, but how long or how short that time may be, is altogether uncertain; perhaps it may vary considerably in different individuals. Then it is supposed the poison is absorbed and becomes diffused throughout the system, and this contamination is perfect and complete before the original ulcer has healed, and before a secondary symptom has made its appearance. Now, if matter is taken from a very recent chancre and inoculated into a sound part, before absorption has taken place and the system become tainted, it is exactly as if it was inserted into a new and healthy person; it ought to produce a chancre, and if the operation is properly performed, most certainly will do so; but if the chancre is of some standing, and time has been allowed for the poison to be absorbed and the system generally contaminated, it is but returning infection on its own source; according to the principle I am labouring to establish it ought not to give a positive result, and, probably, it will not. In the first experiment the inoculated part is pure and healthy, and the infection new with relation to it—in the latter it is manifestly an attempt to recontaminate a part already infected with the same poison. The only objection I can discover to this explanation of the results of inoculation lies in the uncertainty that exists as to whether a system is completely poisoned before the actual appearance of secondary symptoms: this, perhaps, can never be ascertained with scientific accuracy, but the probability is that the contamination is completed at a comparatively early period, and that the occurence of the eruption, or the sore throat subsequently, is but the effort of nature to eliminate and localize the disease. However, the bare possibility of the occurrence alluded to must so vitiate any experiment as to render the result inconclusive and unsatisfactory.

It is now evident that the whole value of inoculation as a test of the infecting power of any matter rests on the truth or falsehood of the law I have propounded, and I am well aware that this latter will be questioned, and even denied by many, unwilling to forego long cherished opinions, and abandon a theory supported by such imposing authority. I can only appeal to time for its ratification if true, for its contradiction if otherwise, but meanwhile let it not be supposed that I prefer the smallest claim to its discovery. I found it stated in works of standard reputation—I heard it from lips from which I received my earliest and most valued instruction—I have verified it by my own observation.

[Dr. Porter next passes to a very interesting and important part of this subject, namely, "whether there is any other animal secretion by which, as well as by pus, the poison of syphilis may be conveyed." The importance and novelty of Dr. Porter's views, fully entitle his paper to the lengthy extracts which we have made. He says]

Here, *in limine*, I am prepared to encounter an almost universal expression of dissent, for surgeons have been so accustomed to regard purulent matter as the one and only vehicle, and have so yielded themselves to authorities on this subject without examination, that it requires no small degree of confidence to raise the question, or even to hint at the possibility of their being in error. But the subject is of too much practical importance to admit of adoption or rejection on any authority, for, if there is any hidden or unsuspected path by which this poison may gain admission unawares—any secretion supposed to be harmless, by which, nevertheless, is often the infecting medium—an acquaintance with the fact may be of incalculable value in explaining myterious appearances, and clearing up doubts and difficulties of a most delicate and distressing nature. It may be as well, however, to commence by a candid acknowledgment, that the advocates of but one vehicle only adhere to the general analogy of nature, when they say there is no other known instance of a plurality of vehicles; and, denying that any such phenomenon has ever been observed, ask why it should obtain in syphilis? Simply, it may be answered, because there is no such disease in the world as syphilis except itself—nothing resembling, nothing bearing the slightest similitude to it. Here, and here only, is a persistent poison, remaining in the blood for years, neither occasioning its own elimination nor the destruction of its victim, but continuing for an unlimited space of time, interfering, sometimes more, sometimes less, with the healthy processes of nutrition, and probably vitiating and spoiling every one of the secretions. In other diseases, if the secretions are universally or even extensively poisoned, and probably, in many instances, they are so, there is neither time nor opportunity for making the discovery: the patient is too much enfeebled to permit of the usual intercourse of society, and the malady terminates for good or evil too soon. But in syphilis, there are both—time, for it may endure for years, and opportunity, for it may possibly exist during these years,—giving so little annoyance that even the patient himself is unconscious of its presence. How it might be with other blood diseases if they endured as long, and were as chronic in their natures, I shall not pretend to say, but really there does not seem to be anything very unphilosophical in supposing that where the blood is thoroughly tainted, every secretion and every product of it should be tainted also.

But this is too comprehensive, too general an assertion. Neither would it result in any practical advantage even if its truth was susceptible of demonstration, for most of the secretions never can come into contact with any other individual, or, if they could, are not likely to be so applied to absorbing surfaces as to convey infection. Now, it is worth recollecting that of the animal secretions which are so disposed as to become facile mediums of communication, each and every one has been regarded more or less with apprehension as capable of communicating the disease, and that not alone by uninformed persons, but by surgeons of eminence and reputation. Thus, both the breast-milk and the saliva have been considered eminently infectious, and with respect to them I am not at present disposed to enter on any inquiry, or to affirm or deny the question. There is such a probability of the existence of some crack or fissure, or other source capable of furnishing purulent matter, on the lip or in the immediate neighbourhood of the nipple, that proof in any case is next to impossible, and, in the absence of actual demonstration, he would be a sanguine theorist indeed, who in these days of professional scepticism could hope to have such a doctrine entertained for a moment, much less received and adopted as truth. Fortunately, the point does not appear to be of any great practical importance; in such cases of suspected contamination it is usually easy to trace its source, and its presence seldom involves any moral imputation. But there is one other secretion that cannot be dismissed so lightly, and, however unprepared we may be to admit the doctrine, and however contrary it may seem to the general laws of the animal economy, that two different, nay, totally different, fluids should be vehicles of one and the same poison,—I think a careful examination of facts will convince any unprejudiced inquirer that the seminal fluid possesses this most unhappy quality, and that in the mysterious process of generation it may be the medium of contamination without the intervention of a single drop of purulent matter. Now, this is (as far as I know) a new assertion, and will probably prove startling to many, but for that very reason I entreat for it a calm and unbiassed examination—not the examination of authorities and books, but of the cases actually met with in practice. Numbers are of frequent occurrence that cannot otherwise be satisfactorily explained—numbers exist at this moment where the absence of such explanation has led to distrust, and misery, and estrangement. It can only be established by observation and experience, and to these unerring tests I willingly confide it.

In the month of July, 1831, a gentleman married, being, as he supposed, perfectly free from any syphilitic taint. In the April following his wife was attacked with condylomata at the anus, tubercular swellings at the pudendum, cracks at the corners of the mouth, and patchy elevations on the dorsum of the tongue. All this time the husband never had a sore or spot of any description. He was examined carefully, and exhibited no symptom, and by his wife's account he had taken no medicine since their marriage that had tainted his breath or made his mouth sore. She had never been pregnant, and therefore could not have contracted the disease from the fœtus in utero: nor had she ever a chancre or sore that could be called a primary symptom. Both the husband and wife were subjected to full courses of mercury, and the symptoms entirely disappeared.

In the year 1836 I had a patient in the Meath Hospital, a poor but very respectable woman ; one on whose word I think implicit reliance might be placed ; who furnished not only an example of contamination this way, but who suffered from the disease in its worst and most aggravated forms. She had rupial scabs, tubercular excrescences, and broad, syphilitic, secondary ulcers,—symptoms, the nature of which could not be mistaken. She never had a primary sore, nor any local affection that could have led her to suspect the nature of her malady, which she appeared to be totally ignorant of when she applied at the hospital. I sent for her husband, and examined him carefully, but could discover nothing except a very small, depressed cicatrix on the prepuce, where he had a chancre two years before his marriage, of which he had been cured without mercury. This woman never had a child, and, therefore, could not have been contaminated by a fœtus.

In July, 1840, a married gentleman, the father of several healthy children, whilst on business in London, unfortunately had intercourse with a servant-girl at one of the hotels, and contracted a sore on the penis, which was pronounced not to be venereal, and healed by topical applications. He returned in August, and in the latter end of September consulted me for sore throat. It was of that character which I am accustomed to describe as resembling the mark of a snail's track on the part, and without hesitation I pronounced it to be syphilitic. He appeared greatly distressed, acknowledged his transgression, but still seemed to lean with some hope on the opinion of the gentleman who had first seen and treated the case, and refused to take mercury, which, indeed, I was unwilling to press, as I understood his wife was far gone in pregnancy. In January, 1841, he came to me in great fright, requesting me to see his wife, whom he feared he had disordered. I found her with several spots of button scurvy, and gave my opinion to the husband that they had a syphilitic origin: still, he was unwilling to believe in a calamity which he dreaded beyond anything in the world, and had a surgeon of eminence in consultation, who decided at once that it was button scurvy, and not venereal, and seemed to be fortified in the opinion by the fact of the lady never having had a previous symptom of any description. In the course of a few days, however, the question was settled by the birth of a child, who died within a week, of unmistakable, confirmed lues. Now, this infant had been begotten in April, three months before the father's first contraction of the ailment, and must, therefore, have been poisoned through the circulation of the mother, at a considerable period subsequently: the question is, how did that circulation become contaminated, seeing that the father had never a sore capable of furnishing a drop of matter, and the mother never a symptom of any description until the doubtful one of button scurvy, which appeared only a few days before her confinement?

In the Dublin Medical Press, October 5, 1853, the following case appeared. It was published by an acute, trustworthy practitioner, Mr. Pratt, of Woodtown, Co. Galway, who evidently had no theory to sustain, and, in giving it to the public, seemed chiefly desirous of bringing into notice a case entirely new to him, and which he regarded with unusual interest. It bears materially on the subject under consideration:—"Mrs. Kelly, aged 25, was married in April, 1853. Her husband had an attack of syphilis three months previously. He has had Hunterian chancres, followed by bubo, ulcerated tonsils, and copper-coloured scaly eruption; had been treated by mercury and iodide of potassium, which cured him of all the symptoms; continued well up to the time of joining the conjugal state, a period of three months; had no sores on the penis or any other symptom whatever. When wedded, a dubious eruption, about two months after, appeared on his leg. In about a month after marriage I was requested to visit his wife, who, he stated, had an attack of quinsy. On my arrival, I found her labouring under ulcerated venereal throat and bubo; the left tonsil was red, swollen, and in its centre an ulcer with everted margin; it appeared as if a piece had been dug out of it; the right, not so much inflamed, had a small ulcer on its inside; her voice was hoarse and somewhat nasal; she complained of pain and swelling in the left groin; on examination, detected a bubo about the size of a hen's egg, which was very red and painful to the touch, but not fluctuating. She stated she never had the least sore on the genitals; even an abrasion, she said, could not escape her attention. I could not discover any sore or excoriation by the most minute ocular examination; there could not be the smallest chancre without my detecting it. I treated her with the iodide of potassium and extract of sarsaparilla, cold lotion to the bubo, and touched the ulcers with nitrate of silver. In a fortnight the bubo disappeared; in another week the throat was healed and voice natural. She continued well for three weeks, when she complained of most excruciating pains in the tibia and frontal bones, evidently venereal periostitis. Ordered the iodide of potassium, as before, with warm bath, which did not succeed in relieving pains. I then directed small doses of mercurial pills with opium until the gums were affected, when she experienced relief; kept up the mercurial action for a fortnight, at which period she was completely cured. Tonics and generous diet, restored her usual health in a short time."

The last observation I shall adduce on this subject is one made by Professor Colles, to which I attach very great importance; for he also had no theory to support, or peculiar opinion to establish; and no one can for a moment doubt either the accuracy of his observation or the truthfulness of his statements. "Before I enter on the subject of syphilis in infants," said that distinguished surgeon, "I must state a fact which, although I am unable to explain it, has yet been forced upon my observation by more than five or six instances, namely, that a newly married man, who is himself free from every appearance of syphilis and every other disease, shall yet infect his wife in such a manner that secondary symptoms shall appear in her in a few months after marriage, and these not preceded by any primary symptoms, or by any discharge whatever from the genitals."

Although this is a subject of more than ordinary delicacy, and one which medical writers rather wish to avoid, it might not be difficult to adduce more evidence, were either authority or evidence conclusive in syphilitic disease, which, unfortunately, they are not: it has already been shown to vary most essentially from all other maladies whatever; it prevails amongst persons not the most truthful and trustworthy in the world; and certainly it has not been examined with the caution and exactitude that its extreme obscurity requires. Hence, the absolute impossibility of advancing any proposition bearing upon its natural history, that will not be open to some cavil or some objection. For example, from the absence of any special notice on the subject, I understand that the females alluded to by Professor Colles and Mr. Pratt were not pregnant; and these gentlemen had no idea of their being poisoned by the fœtus in utero: others may assume the reverse; and so far, in the absence of distinct and positive evidence, the question must remain in abeyance. Unfortunately for its solution, I do not find in the cases that bear upon it any mention made either of a state of pregnancy or the reverse—nothing but a notice of the fact actually observed, without any attempt to explain it, or determine the source that immediately furnished the poison; and the reason, probably, may be, that few surgeons entertained the notion of directly connecting the poison of syphilis with the seminal fluid; and still fewer bestowed a serious consideration on this part of the subject at all. It may then, and indeed I know it will, be said that this doctrine, resting on cases observed by myself, is not supported by sufficient proof. Very true. I acknowledge the deficiency, but it is precisely for the purpose of obtaining that proof I venture to bring it forward, and in the hope that those who may acquire decisive evidence on the subject will not hesitate to make it public. But a very short time since, a young friend of mine being professionally consulted on the subject, answered that a female could not be infected otherwise than in the ordinary way, except she had conceived, when she might possibly be poisoned by her promised offspring; and as the person who had given occasion to the question was not in that condition, the opinion wrought an estrangement between her and her husband that has never since been cleared up. Now, one such case occurring in a man's experience, and the untold miseries arising out of it, ought to be sufficient to prove the necessity of practically determining the point; for, supposing this young surgeon's opinion to have been, as I believe it was, decidedly wrong, he will have been, most unintentionally on his part, the cause of an accumulation of suffering too painful even to reflect on. Often, in discussions on this subject, I have been met by an inquiry whether the woman spoken of had been examined by the speculum, and if it was not quite possible that chancres might have existed deep in the recesses of the vagina or the uterus. I never did make such examination, nor will one ever be made under similar circumstances, because there is no symptom to attract attention in that direction; but if a chancre did so exist, it must either have been the product of illicit intercourse, or communicated by a husband, who had no ulcer on himself, and, consequently, no pus in which the poison could be conveyed. It is of no consequence whether there was a chancre there or not, for its existence or non-existence forms no part of the case sought to be established, which has reference to the poisoning powers of the seminal fluid: and on this head I would simply ask, are occurrences such as I have stated to be regarded merely as accidents? Are they rare and anomalous cases, that may fall out in the practice of one or two individuals, and nowhere else? Are they exceptions only, or can they be made to constitute a rule? It is quite clear that, from their nature, they must be few in number and infrequent, and thus, perhaps, have they attracted less attention from the profession than their importance deserves: but facts, however few, are still incontrovertible, and even in my own experience I think I have observed enough of them to establish as a law of syphilis that *the semen of a diseased man deposited in the vagina of a healthy woman will, by being absorbed, and without the intervention of pregnancy, contaminate that woman with the secondary form of the disease, and that without the presence of a chancre or any open sore either on the man or the woman.* I have the satisfaction of knowing that some practitioners of undoubted ability and great experience fully concur in this opinion.

This, however, is a doctrine that will not be permitted to rest on any opinion or any authority; it must be rigidly examined, and its truth or falsehood proved. It is not a mere matter of curious speculation, neither is it one of physiological interest alone: it is eminently practical, and may exercise a telling influence on concerns more valuable than life. But as everything pertaining to syphilis has hitherto been wrenched and twisted out of its proper form, in order to be adapted to some favoured theory, and as it is vain to hope for the easy removal of long established prejudice, it must be to those who have not yet entered on the inquiry, whose minds are not preoccupied, that we must eventually look for trustworthy information on the subject. The investigation of this formidable disease is still an open, unbroken field, that will amply repay the labour of cultivation. Most non-professional persons believe that there is but one mode of contracting syphilis, and must feel doubtful and uneasy at perceiving it in persons and under circumstances which, consistently with such a notion, cannot be satisfactorily explained. Now, any surgeon consulted on one of these suspicious cases, if he conscientiously believes that purulent matter alone can be the vehicle of contamination, must not hesitate in saying so; and that opinion may destroy a virtuous and unsuspecting female, and consign a respectable family to lasting misery and disgrace. But such a man may remember, and if he neglects to inform himself fully on the subject, he will remember afterwards with regret, that in thus acting, he may possibly have been in error; for, that men who have studied it, with great opportunities and no little diligence, have held totally different opinions.

I have now to direct my attention to another, but not less important question.

Most, I believe I might truly say all, other morbid poisons with which we are acquainted produce their full effects with great rapidity, and work out their terminations for good or evil according to certain laws, which they obey with a degree of regularity that admits of no exception; thus, the inoculations of hydrophobia, glanders, dissection wounds, bites of serpents, small-pox, and several others, however they may differ among themselves in their periods of incubation and manner of development, agree in affecting the system in all its susceptible parts at the same time, and in coming, without pause or delay, to their legitimate terminations. But syphilis, although there may be good reason to think it contaminates the whole system very quickly, yet exhibits the effects of that contamination with comparative slowness, and always, apparently, step by step, occupying part after part, and structure after structure, in such wise, that there is or seems to be a certain order or arrangement of parts through which the disease ought successively to pass, each part exhibiting a class of symptoms proper and peculiar to itself. Of course, this assertion must not be taken as logically and universally true, because there are, occasionally, some deviations from it; but it is sufficiently correct to be received as the usual and general law, and involves in its exceptions some of the most obscure and difficult points in the theory of the disease. Thus, syphilis first appears in the form of a minute sore or ulcer, from which the poison is or seems to be absorbed into the system, the evidence of which absorption is sometimes seen in the swelling and suppuration of a gland in the vicinity. These disappearing, are, after a time, succeeded by affections of some of the fibrous tissues, by nocturnal pains, eruptions on the skin, or by ulcers in the throat. These again, at a later period, are followed by cracks and ulcers of the lips, fissures and condylomatous swellings on the tongue, verrucæ and fici at the anus, deeply seated inflammations of the eye, and enlargements of the testis. Finally, the periosteum and the bones become engaged, and I believe the internal organs also, until, worn with suffering, and often loathsome to himself and others, the miserable patient sinks and dies. Now, this is but the description of a persistent poison, working slowly, to be sure, but steadily and unceasingly, to its normal termination, having long and large intervals, perhaps, between the development of each succession of symptoms, but still raising them with sufficient regularity and frequency to make its presence known, and to keep the patient sensibly alive to the misery of his condition. Ricord says, that when no specific treatment has been employed, and when the disease has been left to its natural course, "six months never elapse without syphilitic poisoning manifesting itself;" and he adds, "six months! yes, and even six months is a very long period, for most frequently secondary symptoms make their appearance from the fourth to the sixth week; frequently in the second or third month; and rarely in the fifth or sixth. It is a truth which cannot be too often repeated, and the results of which follow as certainly as those of Galileo." There can be no doubt of the general accuracy of this statement; but I would now ask, is there any exception to the law—is such a state of activity indispensable—or does a contrary condition ever exist? Can a case possibly occur in which a secondary symptom never appears, or, appearing, be so trifling as to escape attention? May the poison remain latent or quiescent in the blood for months, or even years, and afford no indication of its presence? and may the dormancy of this state be so perfect that the patient shall be totally unaware of his condition, have forgotten the previous existence of any disease, and believe himself healthy, until painfully convinced to the contrary by some unhappy communication of infection? Answers to these questions will exhibit the peculiarities of the venereal poison in a point of view more striking than any in which they have yet appeared.

So long ago as the year 1824, the late Dr. Beatty, in a paper alluded to on a former occasion, stated his observation that married females had frequent miscarriages and dead children, occasioned by a venereal taint, although no symptom existed to indicate the nature of the cause. The remark was, at the time, original, and attracting, as it deserved, a good deal of professional attention, it aroused a spirit of observation and inquiry, which ended in the establishment of the fact beyond doubt or contradiction; and it is now very generally understood and acknowledged by the medical practitioners in this country, that the fœtus in utero may be poisoned by the disease existing in the father and mother, although not even a suspicious symptom can be discovered in either. Thus, this poison, that may be so entirely suspended in its effects, and circulate so harmlessly as not to give any indication of its presence, nevertheless preserves its mischievons qualities in such perfection, as not alone to be capable of communicating the disease, but of conveying it in its most complete and concentrated form, and endowed with all the virulence it can be supposed to possess; for in all children is the character of the disease the same; in all is the contamination thoroughly and entirely finished. In this does infantile syphilis differ from that of the adult, that it has no stages to pass through—no successive organs, or tissues, or orders of parts to attack, but has already infected every spot susceptible of its influence, and contaminated and spoiled the entire body. Many young and respectable females suffer repeated miscarriages at different periods of gestation, and often bring forth the fœtus in a decayed and putrid state, without ever entertaining the slightest suspicion of the cause: sometimes they go the full time, or nearly, but the child ceases to move three weeks or a month before the expected time of parturition, and comes into the world not only dead, but decomposed, the cuticle peeled away, and the skin red, and moist, and flabby, as if it had been for some time undergoing the process of maceration. Again, one of these women may go her full time, and be delivered of a fine and seemingly healthy child (for in such the pocky symptoms are not observed at the actual period of birth), but in the course of three or four days, or somewhat later, the little creature refuses the breast; screams continually in a weak and raucous voice; the angles of its lips crack; the mouth is surrounded by a copper-coloured eruption, sometimes fissured, sometimes branny; the insides of the mouth and fauces are white and dirty; a copper-stained blotch appears over the nates and privities, which soon become excoriated and exude a fetid sanies; and detached spots of a copper, and sometimes of a purplish hue, appear on other parts of the body; the child's features become contracted, and assume the appearance and expression of premature old age, and it pines and dies rapidly, seeming to suffer great pain, for its hoarse cries and screams are incessant. Or, it may happen that the symptoms shall appear much later, even by a fortnight or three weeks; or that they shall be of a much milder character, and allow time and opportunity for the administration of the remedy. In a word, there is some variety as to the time of access and severity of symptom, but little or none as to the complete character of the disease. Now, when a case of this description occurs, it is perfectly clear that the child has some confirmed constitutional disease, which it brought into the world along with it, and, therefore, inherited in some manner or other from its parents: it is also clear that this disease is not and cannot be the result of an inoculation or local infection derived from its mother *in transitu*, for such would only appear at one spot, and never run its course to destruction with such rapidity: and it is but too frequently as well as too painfully proved that this affection is genuine syphilis, by the fact of the infant communicating that disease to any woman, except its mother, who may undertake the duty of nursing it. Further, it is now familiarly known, and has been repeatedly proved by experience, that during all this time the father and mother may not have exhibited a single tangible symptom—not the smallest speck or sore that could furnish a solitary drop of purulent matter; and, therefore, we are forced to the conclusion, not only that something else beside that matter may be and is the vehicle of contamination, but that the infecting principle may exist for months or years within an individual without his cognizance of it, or his ever experiencing any symptom that could awake anxiety or create alarm. The only possible mode of otherwise solving the difficulty is by boldly denying that these infantile affections are syphilitic; and if they are not, what are they? What occasions the chancrous ulcerations about the nurse's nipples? What the cracks and fissures in the lips of any one that tends and fondles the infant? What is it that spreads its foul influence through every member of the family, as so truly and so graphically described by Dr. Colles? Many, I am fully aware, have been driven to deny the existence of infantile syphilis, but no one can deny that cases such as I have described frequently occur, because the experience of every hospital furnishes convincing evidence to the contrary; and let them only provide these affections with a name. For my own part, I believe it to be true and genuine syphilis; and, knowing what a number of important facts, in connexion with the natural history of the disease, are illustrated and explained by the infantile disease, I shall endeavour to avail myself of its assistance a little further.

It happens not unfrequently that medico-legal questions arise, on which may depend the peace, the happiness, and the respectability of families, and which can only be answered by one intimately acquainted with the natural history of the disease; and surgeons are occasionally greatly teazed, and sometimes thrown into positions of considerable embarrassment, by being obliged to give distinct and positive evidence as to pocky children, and nurses disordered by them, without having fully considered and mastered the subject. I believe it has happened that a nurse has actually sought for a child of this description, in order to extort money from its parents, and certainly many families have been placed in extremely painful situations under such circumstances. Let us, for example, suppose a young and unsuspecting female, after a number of miscarriages, to give birth to a weak and sickly child: she nurses it herself for some time without experiencing any personal inconvenience, but observes that the infant is pining and delicate, has some kind of eruption on its body, and every day becomes more feeble; she is induced to believe her milk is unwholesome, or not sufficiently nutritive, and provides a nurse, who soon gets ulcers on and around the nipples, and if she does not suspect the nature of her disease, and take precautions accordingly, infects her husband, and, in the end, spreads the disease through her entire family. Then, let it be supposed still further, that a surgeon is called upon to investigate this case. He finds both the father and mother of the child apparently free from anything calculated to create suspicion: true, they may be delicate, very susceptible of fatigue from slight exertions, prone to take cold, often suffering from headache, or pains in the limbs resembling rheumatism, but wholly and entirely exempt from speck or spot, or sore or ulcer, of any description. How can the disciple of John Hunter—how can the believer in the theory of purulent matter being alone infectious—or, still more forcibly, how can the follower of Ricord, or of any one that adopts the strange notion that the poison resides only in the early formed matter of a chancre, afford any explanation of this case, or of any of the phenomena attendant on it? But if he is persuaded that the poison may be dormant in a man for months and years; that by the intercourse that takes place between them, that man may infect his wife; that neither of these parties may exhibit a single tangible symptom, and yet, year after year continue producing diseased and pocky children; that any of these children may be tended and suckled by its mother without the infection being returned on its parent source, but that, given to another woman, it will soon and certainly contaminate her—then he will find the explanation of these difficult and important facts easy and familiar, whilst the facts themselves tend to illustrate and establish the opinion. But however satisfied in his own person any surgeon may be as to the conditions of such a case, he may find it a very difficult task to make another understand him. Men are accustomed to connect the idea of disease with more or less of present suffering: they cannot conceive how an individual may be deeply infected, and exhibit no sign or symptom of the taint; neither can they well comprehend why a child's mouth should certainly poison one individual, and be altogether harmless to another; in fact, they cannot believe in the persistence of a diseased condition for years neither killing the patient nor wearing itself out, exhibiting no sign or token of its presence, yet capable of being communicated to another: and, after all, it is chiefly in this persistence that the peculiarity of the syphilitic poisoning consists, and by which it differs from every similiar known affection. When this is fairly understood, the chief difficulty of the subject vanishes away.

It is most interesting now to observe how all these properties of the syphilitic poison, seem, as it were, designed to assist in increasing its capability of diffusion; its continuance in the system during an unlimited period; its exhibiting no symptom, as if to lull suspicion and throw its victim off her guard; its not occasioning fever or sickness, or confinement to bed, or greatly interfering with the strength or physcal powers,—all tend to minister to its diffusion by various channels, but principally through the offspring of the infected. As the morbid poison of syphilis is special and peculiar in being persistent, so is it special and peculiar in being transmitted by hereditary descent; and when it is considered that consequences may in this way be induced, that no foresight could anticipate, and no precaution prevent, it will require no argument to prove that this form of infection possesses a facility of propagation above that of any other disease whatever. For example, what wife can protect herself from the consequences of a tainted intercourse, her husband fully convinced that he had been cured of the disease from which he had formerly suffered, and of which he had not observed a symptom for a considerable length of time? What nurse will suspect danger from a baby received from parents apparently free from any disease? And when all the channels in which this one source of infection may subsequently be impelled come to be considered, perhaps the chief subject of surprise ought to be, that the disease is not more extensively diffused. These are not mere matters of speculative doctrine, neither are they the results of theoretic reasoning: they are not to be disposed of by assertions, that the poison never affects the fœtus, nor can mistakes be excused by sheltering under the names of Hunter or of Ricord; they are matters which come upon us with overwhelming practical interest, on occasions when there may be little time for reflection, and none for preparation; and which every student of syphilis should earnestly and anxiously investigate for himself. The opinions of Ricord are beginning to be held in considerable estimation in this country, and young men speak flippantly and confidently of them, as if they rested on infallible authority, had entirely exhausted the subject, and rendered any farther investigation quite unnecessary; but if the pus of the ulcerating or stationary chancre alone can convey the poison, how comes it that among the better and more educated classes, a wife is ever infected, or a pocky offspring ever born, seeing that in this country men generally seek to be at least apparently cured, and free from obvious disease, before they incur a risk of this description? Or how is it that a nurse is ever contaminated, when it is certain that a child can have no primary sore of any kind or description, or in any state or stage of progress? It will be difficult to believe the evidence of the senses, and receive these modern doctrines implicitly and without dispute.—*Dublin Quarterly Journal, Feb. and May,* 1857, *pp.* 88, 257.

MIDWIFERY,

AND THE DISEASES OF WOMEN, ETC.

136.—ON THE INDUCTION OF PREMATURE LABOUR.

By Dr. W. Tyler Smith, Physician-Accoucheur to St. Mary's Hospital.

[There are many ways by which premature labour may be brought on. The earliest plan adopted was that of puncturing the membranes with a quill or stilette; but the great disadvantage from this is, that the chances of saving the fœtus are diminished owing to the waters being discharged; among other methods we may mention the dilatation of the os uteri by tents, the separation of the membranes around the os uteri, the administration of ergot, the use of electricity, the application of cupping glasses to the mammæ, and by other means; but Dr. Tyler Smith says that]

A method superior to all others, where the safety of the child especially is an object, is that of the water-douche, said to have been practised in Holland, but introduced in a systematic manner into practice, and methodized, by the late Professor Kiwisch, of Wurzburgh, a man of rare obstetric genius. If a stream of hot or cold water be directed against, or, still better, within the os uteri, at intervals of three or four hours, for the space of ten minutes or a quarter of an hour at each application, labour is certainly and speedily brought on. The water may be made, by means of a syphon and reservoir, to descend upon the uterus from a height, or it may be forced into the os uteri by a common injecting apparatus, or an O'Beirne's tube. Kiwisch explained the *modus operandi* of the douche on the supposition that it caused swelling of the parts by the imbibition of fluid, and separation of the decidua from the uterus. Probably the reflex and peristaltic actions of the uterus are also excited, and I have found the douche more efficacious when warm and cold water have been injected alternately, than when either warm or cold has been applied alone. The great superiority of this method consists in the fact that premature expulsion, excited through its means, is more certain, and it is a closer resemblance to natural labour than can be obtained in any other mode. There is no risk of any injury to the os uteri, and the membranes remain unruptured, during the stage of dilatation, just as in ordinary labour. Hence it happens that the os uteri is dilated by the influence of fluid pressure, and the fœtus escapes compression in the early part of labour. These circumstances are attended by such obvious advantages, that in my opinion no one would be justified in puncturing the membranes in a case in which labour was brought on to save the mother and the child, or in circumstances where the child alone was in danger. The membranes certainly cannot be ruptured as a preliminary to the induction of labour without diminishing the chances of saving the child. I repeat, the use of the douche possesses great advantages in all cases in which the safety of the child is an object. In cases where there is no possibility of giving birth to a viable child, the stiletted catheter or other means may be resorted to, but even then the douche promises the greatest safety to the mother, excepting under certain circumstances presently to be mentioned.

It remains to say a few words as to the *time* at which the operation has to be performed, and as to the methods of operating to be preferred in the earlier or later stages of gestation. When the premature expulsion of the ovum is requisite in the middle months of pregnancy, or at any time between the fourth and seventh month, purely with reference to the safety of the mother, the use of the douche is, I believe, the best method. In the early months, while the cervix uteri is as yet undeveloped, and the ovum is contained in the cavity of the fundus uteri, the douche cannot be relied on. I have been consulted in one case of marasmus from excessive vomiting during early pregnancy, in which death occurred before the douche could be brought to bear. In these cases, the plan I have adopted is, to introduce the uterine sound into the uterus, and turn it round once or twice, an operation which, according to my experience, never fails to induce the expulsion of the ovum; and is, I believe, attended by little risk, when carefully performed. After the third or fourth month, and before the end of the seventh, the membranes may be punctured with the stiletted catheter. At this time there is no expectation of saving the child, and the size of the head is not such as to render the retention of the liquor amnii of any consequence. Before the fifth month it is dangerous to use this instrument.

For a considerable time, the operation was not considered justifiable in primiparous women. It was considered that at least the experience of one labour was necessary in order to judge of the propriety of inducing premature labour in any given case. At present, however, if a woman pregnant for the first time passes from any cause into imminent peril of death, and this peril is increased or caused by the existence of pregnancy, it is considered perfectly justifiable to obtain the expulsion of the contents of the uterus. Again, if a woman in her first pregnancy is found to be so deformed as to render the birth of a living child impossible, it is held to be quite right to induce premature labour in the early or middle months of pregnancy, and not to wait for the danger of her first delivery, and the performance of craniotomy. In cases of doubtful capacity of the pelvis, or when the state of the pelvis has not been ascertained before the time of the first labour, but in which craniotomy has been necessary, or in which children have been still-born and the mother placed in danger, from decided disproportion between the head and the pelvis, the practitioner should always insist upon the necessity of inducing premature labour in future pregnancies. In this way the lives of multitudes of children and of many mothers might doubtless be saved. A great responsibility is incurred by allowing women with moderate contraction of the pelvis to go on to the full time in successive pregnancies, and thus sacrifice successive children. It is probable that the practice of the induction of premature labour will be extended from a greater knowledge or increasing appreciation of its importance, and also from a real increase in the cases calling for it. Amongst the manufacturing population deformities of the pelvis are probably on the increase, and amongst the educated classes, the size of the fœtal head, and delicacy of constitution will form impediments to labour in an increased number of cases. It is amongst the educated classes that the greatest number of still births occur, and that the greater suffering and danger to both mother and child are met with. At the present time there is no point of progress in the obstetric art of equal importance with the extension of the induction of premature labour, in cases calling for the operation.

The extension of the induction of premature labour in cases where mothers have, in successive births, produced still-born children, is one of the great means to which we must look for the diminution of the mortality amongst children at birth. Every man engaged in the special or general practice of midwifery must have met with cases in which healthy well-formed women have produced a considerable number of still-born children in successive births, or in which, out of large families, only one or two have survived the birth. It is to such cases that the induction of premature labour is peculiarly applicable, and in which it is at the present time but little practised. In cases of this kind, the chances of saving the child may be greatly increased by the operation, without risk to the mother.—*Lancet, Nov.* 22, 1856, *p.* 560.

137.—ON THE DURATION OF PREGNANCY.

By Dr. J. Matthews Duncan, Lecturer on Midwifery, &c.

[The author, in January, 1854, read a paper before the Royal Medical Society on this subject, in which he showed that the average interval between insemination and parturition is 275 days, and between the end of menstruation and parturition 278 days. Dr. Veit, from a mass of observations, fixed the latter period at 278·5 days.

Dr. Montgomery fixes the ordinary period of utero-gestation at 280 days, and pronounces 275 days, the opinion of the immortal Harvey, to be erroneous.

The author then goes on to say, that his object in the present article is to defend the opinion of Harvey, and to re-affirm his conclusions of 1854, and to show that Dr. Montgomery's assumption of 280 days is unfounded.]

The Duration of Pregnancy.—The period generally recognized under this name, and discussed by Dr. Montgomery, does not measure the real duration, which extends from conception to parturition, but that other period extending from fruitful connexion to parturition. It is this latter of which we now discourse.

Dr. Montgomery describes the natural period of human gestation as 280 days. Now, there is no such thing known to obstetricians to exist in nature, as a natural period of pregnancy, measuring a certain number of days. This interval between fruitful coitus and parturition, is known to us only as a variable period, of uncertain length, in different individuals, and in the same individual on different occasions. So far is Dr. Montgomery from having any authority for fixing 280 days as the natural period, that, in his own laborious collection of fifty-six cases, in which, he says, the day of fruitful intercourse was known, there are only four in which parturition certainly occurred on the 280th day. Obstetricians can only speak with propriety of an average duration. This is attainable by striking it from the largest collection of well ascertained cases. This average is the nearest approximation that can be made to what may be called the natural period of gestation. The data afforded by Dr. Montgomery for arriving at this mean or average, or nearest accurate general statement of the interval between fruitful connexion and parturition, the duration of pregnancy, are of different degrees of value.

The most trustworthy and valuable are undoubtedly those cases of pregnancy which date from a single coitus. They number twenty-five, and the duration of each is as follows:—263, 264, 265, 265, 267, 270, 271, 272, 273, 274, 274, 274, 274, 274, 275, 275, 276, 276, 275 or 277, 277, 278, 280, 280, 287, 291 to 293. Of these twenty-five cases the mean is 274 days. The best data accessible to Dr. Montgomery, then, give 274 days as the duration of pregnancy, not 280.

It appears to me, that the next most valuable data for settling this point are to be found in the table of thirteen cases dating from the day of marriage. The interval between marriage and parturition in each of these cases was as follows:—261, 265, 268, 269, 270, 271, 271, 271, 272, 273, 274, 279, 291. In regard to these, Dr. Montgomery himself says:—"The average interval between the day of marriage and that of labour was 272 days q. p., or thirty-nine weeks, minus one day; or, if we deduct the last case, which went to 291 days, the average interval would be 270⅓ days. Where, then, one naturally exclaims, are the grounds for saying that the natural duration of pregnancy is 280 days?

Dr. Montgomery's work presents us with another table of data. It consists of fifty-six cases, in which, he says, the day of fruitful intercourse was known. Now to us, this table, at first sight, and before estimating the results of it, appeared to be of less value than either of the two former. Every case, almost, is invalidated because we do not know the authority or grounds upon which it is said that the day of fruitful intercourse was known. We do not know even the observers' names. Dr. Montgomery has laboriously collected cases of protracted pregnancy, all of which, so far as available for this table, find place in it. The whole weight and importance of it is contributed by the distinguished obstetrician's name that publishes it. That authority is, undoubtedly, of the very highest, but can scarcely be communicable to cases derived from a promiscuous set of observers, whose reasons for decidedly fixing on a single day are not given. In an exact investigation like this, all cases should be rejected except those dating from a single coitus or coitus on a single day. But let us examine and see what this table affords towards the solution of our question. Omitting six cases where a single day is not given, we have fifty where the interval between fruitful intercourse and parturition is said to be as follows:—242, 258, 258. 263, 265, 267, 267, 267, 267. 268, 269, 269, 272, 273, 273, 274, 274, 275, 275, 276, 277, 277, 278, 278, 279, 279, 279, 279, 279, 280, 280, 280, 280. 281, 283, 283. 284, 285, 286, 287, 287,287, 288, 290, 291, 291, 292, 293, 293, 297. Of these 50 cases, all those satisfactorily known to Dr. Montgomery, the mean duration is 277 days. This table, framed under the conditions above described, yields a result opposed to the dogma of its author. Where, then, is the authority for stating 280 days as the natural period of gestation? It is nowhere.

We agree with Dr. Montgomery in his opinion that there is no other satisfactory method of arriving at the solution of this question, but the one we have just followed, viz., the collection of well ascertained facts and their analysis. "Independently (says he) of the very few cases in which we have satisfactory evidence of conception following casual intercourse, or perhaps a single coitus, we have no certain means of knowing exactly the commencement of gestation, and are obliged to form our calculation on one or other of three very fallacious grounds;" which he then proceeds to consider.

The Calculation of the Day of Confinement.—In the vast majority of cases, this must be made from the termination of the last menstruation, for reasons which are well known. The average time to which a woman goes, after the last appearance of the menses is 278 days (a period shorter than Dr. Montgomery's duration of pregnancy!) This average is obtained by the collection of single observations and their subsequent analysis. If, then, we wish to ascertain the most probable day of a woman's confinement, we add 278 days to the last day of the last menstruation. The method of doing this, without a periodoscope, I have shown in the 'Monthly Journal' for March 1854.

Dr. Montgomery gives no specific directions for making this important calculation. But, it appears, from some passages occurring incidentally in his essay, that he adopts the following plan. Some day is selected after last menstruation, as the most probable day of fruitful intercourse, and 280 days are added thereto. As the selection of this day must be, in almost every case, made on the most worthless and insufficient grounds, the resulting calculation must be similarly characterized. Besides, if there be any truth in the statistical data of Dr. Montgomery, and their analysis given above, which is partly his own, then this plan of his must lead to a putting off of the probable day of confinement to far too distant a time. For instance, we have in the table of observations dated from the day of marriage, thirteen cases on Dr. Montgomery's own authority. Now, in these, as already stated, the women went on an average only 272 days from the day of the nuptials. If a probable day of fruitful intercourse, after marriage, had been selected, and 280 days added thereto, in these cases, such a plan would have evidently led to a mass of errors in the way of putting off the predicted day of confinement far too long.

I may here mention that, with the subject of this important calculation or prediction, Dr. Montgomery has confounded the question of the interval between insemination and conception. If such an interval existed, he says, "we should have no means of calculating the period of gestation, with anything like an approximation to accuracy, in any case." Now, if there be an interval in nature between insemination and conception, we must adopt it, whatever results it may lead to. If it truly exist, it can lead only to true and good results. It is not considered probable by Dr. Montgomery, that any interval or an interval of any importance does exist. The highest authorities, however, on such a point, are unquestionably very strongly in favour of the belief in its existence and its being of considerable extent, say several days. But, in truth, this question of a possible interval between insemination and conception has nought to do with the calculation of the date of confinement. Its truth or untruth does not affect such calculations, and no author but Dr. Montgomery, has, so far as I know, discussed the two points as connected with one another in any way tending to modify practical precepts.

Harvey's Opinions.—Great men often seem to arrive at the truth, even in circumstances of complication and difficulty, by some process so simple that it appears like an operation of instinct. The immortal Harvey's expressed opinions in regard to the duration of pregnancy, and the calculation of the day of confinement, bear this character, for we cannot discover the grounds on which he arrived at results so nearly identical with those of modern science.

The interval between the festival of the Annunciation and the day of the Blessed Nativity is that adopted by Harvey, as unquestionably the ordinary term of utero-gestation. This is a period of 275 days, lady-day or the festival of the Annunciation being on the 25th of March, or 80th day of the year, while the day of the Nativity is the 25th December or 360th day of the year. It is remarkable, that the largest recent collection of cases, made on certain or on the best grounds, gave also an average result of 275 days. *(See my collection of forty-six cases, loc. cit.)* Harvey, it will be observed, does not speak of any natural term, but only of the ordinary term, his correct appreciation of which is clearly indicated.

Harvey guards, also, his rule for calculating the day of confinement, from being considered exact, by saying that those prudent matrons who follow it "are rarely out of their reckoning." His statement is, that after ten lunar months have elapsed from the commencement or appearance of last menstruation, they fall in labour the very day the catamenia would have appeared, had impregnation not taken place. If the usual or average computation of the menstrual periods and intervals is adopted, the period of Harvey is 280 days, including the number of days of the last period. Ten times the usual interval and period of discharge, that is, ten times 28, gives 280 days; but as this includes the last period, of course the three, four, or five days of that period have to be taken from the 280 days, if we wish to find the interval he allowed between the end of last menses and parturition. Thus, Harvey gives prudent matrons only an approximative calculation. The interval between last menstruation and parturition, according to him, is something a few days less than 280. The average time found by modern calculations, as stated in an early part of this paper, is 278 days, with which Harvey's rules are as nearly in accordance as can be expected in a subject altogether incapable of any exact statement.

Dr. Montgomery's objections to Harvey's opinions are founded on the assumed accuracy of his own natural period of pregnancy, namely, 280 days after conception. We have already shown that this period is assumed on insufficient grounds, and that as the day of conception is never known, we must seek some other method of calculating the day of confinement than any founded on the supposed day of such an occurrence. Without seeking to disparage the very high value and authority of Dr. Montgomery's writings, we have thought it necessary to publish these comments, believing, as we do, that they demand from that eminent obstetrician some modification of the views enunciated in his essay on the period of human gestation.—*Edinburgh Medical Journal, November* 1856, *p.* 410.

138.—ON TURNING.

By Dr. TYLER SMITH, Physician-Accoucheur to St. Mary's Hospital.

The hand to be used in turning is a matter worthy of consideration. Two things weigh here: first, the hand which most easily adapts itself to the different conditions in which turning is required; the second, the hand with which the operator possesses most skill and power of manipulation. It is best, as far as possible, to accustom ourselves to the use of both hands in obstetric practice, so as to acquire a readiness in the use of the left hand, as well as the right; but for persons who are awkward or unpractised with the left hand, the greater mechanical facilities for its introduction, in some cases, will not at all compensate for the greater power and freedom possessed by the right hand and arm. One thing should be especially borne in mind—namely, to use at the commencement that hand with which we shall be able to complete the operation, so as not to fall upon the course of being obliged to withdraw one hand in order to substitute the other, after the operation has been in part performed.

In placenta prævia, the hand to be introduced should depend in part upon the situation of the separation of the placenta from the os and cervix uteri, or, in cases of partial placental presentation, upon the portion of the os and cervix uteri to which the placenta is attached. When the placenta is separated from the anterior or left border of the os and cervix uteri, or when it is attached only to the posterior or right margin of the uterine aperture, the right hand is most convenient. When the opposite state of things is met with—that is, when the placenta is detached or wanting, posteriorly, or on the right side of the os and cervix, the left hand is most readily introduced into the uterine cavity. A chief object, in such cases, is to pass the hand through the os with as little detachment of the placenta as possible. When the operation is called for by some condition of the mother, and the head presents, the mechanical facilities of passing the hand and reaching the feet are modified by the situation of the vertex. It is easier to pass the hand over the face than the vertex, and the feet of the child are usually found on the same side as the face. Thus, in the first and fourth positions, the left, and in the second and third positions, the right, hand would be most convenient. When the head is known to present, but the special presentation cannot be made out, it must be taken for granted that the head presents in the first position, that presentation occurring in from 70 to 80 per cent. of all head presentations. But when the head is so high as not to be reached for diagnosis, it matters comparatively little which hand may be used. In turning in presentations of the upper extremity, the hand to be used should depend on the circumstance of whether the anterior part of the child be towards the abdomen or the spine of the mother. In the first position, in arm cases, when the abdomen of the child is towards the spine of the mother, the left hand is most convenient. In the second position, in arm cases, the abdomen of the child is towards the abdomen of the mother, and the right hand of the accoucheur should be employed. Turning, when the right hand can be most readily employed—that is, when the abdomen of the child and the extremities are directed towards the abdomen of the mother, is more easy than when the fœtal abdomen is turned towards the spine, on account of the greater depth of the pelvis posteriorly as compared with the anterior, and the less distance the hand has to traverse to reach the uterus in front. In all cases of doubt, therefore, or when the facilities of passing the hand in any direction are equal, the right should be preferred, both on account of the greater ease with which it reaches the uterus, and the greater skill in manipulation possessed by almost all persons with the right hand.

As a preliminary to Turning, and to all operations within the pelvis, the bladder and the bowels should be emptied. The position of the patient varies in different schools and with different teachers. In France and America, many of the best authorities prefer to have the woman placed on her back. In this country, the ordinary obstetric position on the left side is generally preferred; but the nates of the patient are brought to the edge of the bed. The accoucheur should not only bare his arm, but take off his coat, and having introduced some lard into the vagina, and well greased the arm and the back of the hand which it is intended to use, the operation may be commenced. The first difficulty is at the ostium vaginæ, and the introduction of the hand into the vagina is sometimes the most painful part of the whole process. The fingers and thumb should be put together in a conoidal shape, and gently introduced during a recession between the pains, in the direction of the axis of the outlet of the pelvis. When the thickest part of the hand is passing the sphincter vaginæ, the patient, if sensible, generally cries out, and this cry facilitates the passing of the hand by relaxing the sphincter. When the hand is fairly in the vagina, and the os externum embraces the wrist, there is little suffering; and, at this stage of the procedure a short pause is advisable, during which the accoucheur may make a more complete examination than he could with the finger alone, and decide as to the particular direction in which the hand should be carried forward through the pelvis. When the arm or a shoulder presents, there is a difficulty in introducing the hand into the vagina, not only from the state of the os externum, but from the shortness of the unoccupied portion of the vagina, and it requires some management to pass the hand into the vagina in such a manner as to retain the fingers in a position admitting of effective manipulation upon the os uteri. While one hand is passing through the os uteri, the other should be laid upon the abdomen, so as to steady the uterus, and prevent its being pushed upwards. Cases have occurred in which the posterior wall has been lacerated, or the posterior lips of the os separated from the vagina by awkward and forcible attempts under these circumstances. The direction of the hand should, on entering the os uteri, be altered so as to follow as nearly as possible the axis of the middle strait, and subsequently the inlet, of the pelvis.

The further steps of the operation must greatly depend on the state of the os uteri. When the os is fully dilated, and the membranes unruptured, turning is easily effected. The hand should be passed into the uterus between the membranes and the uterine parietes, the palm of the hand being directed towards the abdomen of the fœtus. No attempts at pushing the hand forward are to be made during the presence of the pain; but if pains come on at the time of the passage of the hand, it is to be held perfectly still, and slightly hollowed, so as to adapt itself to the walls of the uterus. Care must, however, be taken not to exert pressure upon the umbilical cord, and particularly its insertion into the abdomen, by the hand. This point should be defended, at the same time that as little pressure as possible is exerted upon the uterine parietes. With the os uteri dilated, the waters undischarged, and the uterus in that comparatively quiescent state which obtains before the commencement of the expulsive stage, the whole operation up to this point is comparatively easy, and need not occupy more than a few minutes. The membranes have now to be ruptured by pinching them between the fingers; but little water is discharged owing to the engagement of the os uteri by the wrist or arm. Sometimes, the knee or foot of the fœtus can be felt through the membranes before their rupture, at others, these parts are best made out after the hand of the accoucheur has passed through the membranes. If we could choose the time at which turning should be performed, we should select the moment at which the os uteri had fully dilated, but the membranes had been unruptured, or we should seek the time at which the membranes had broken, but before the violent contractions of the second stage of labour had commenced. Most frequently, however, we have no choice in the matter, but are obliged to act after the membranes have been ruptured, and the uterus has contracted upon the fœtus.

In some rare instances of transverse presentation, it is possible to raise the arm or shoulder and bring down the head, effecting what is called Cephalic version. In this operation we have to retrace the steps by which the presentation of the head is commonly converted into transverse presentations. The head of the child has to be manipulated by the hand engaged in utero, so as to bring it to the pelvic brim, with the vertex directed towards one of the sacro-iliac articulations. After this, the case is left to Nature. Cephalic version is very much aided by external manipulation, particularly when the uterus and abdominal walls are sufficiently thin to allow of the different parts of the fœtus being readily felt. Cases are even recorded, by Martin of Jena and others, in which rectification and alteration of mal-presentations have been effected by external manipulation alone. In pelvic version the nates are brought down but this is a very difficult procedure, on account of the lubricity of the parts; and it is not of very much greater value, when effected, than Podalic version, when one foot only is brought down.

When the os uteri is only partially dilated, the passage of the hand into the uterus is a more difficult procedure. It is held that when the os is dilated to the extent of a crown-piece, or two or three fingers can be introduced, either with or without the rupture of the membranes, the hand may, with care, be passed in, so as to turn. The os must be very gently and slowly dilated by separating the fingers, and urging them on in the cone shape used in passing the ostium vaginæ, the pressure being exerted in the direction of the inlet of the pelvis. Care must be taken to support the uterus externally, and not to push the uterus upwards to such an extent as to separate it from the vagina. When the os has been fairly passed by the hand, the anterior surface of the fœtus must be reached in the way already described.

The most difficult of all cases are those cases of transverse presentation in which the diagnosis has not been made out early in labour, or in which the case, from some circumstance or other, has gone on a long time unrelieved. Here, the arm or shoulder is found low down in the pelvis, occupying the vagina; the presenting part is firmly embraced or grasped by the os uteri; the waters have long flowed away; the uterus has closed with great energy upon the fœtus; and is reduced to the smallest possible compass consistent with the retention of the placenta and the non-presenting portions of the fœtus. Thus, every step is a laborious matter. It is difficult to introduce the hand into the vagina, and still more so to pass the hand, or part of the hand, into the uterus and raise the presenting parts of the child. It is only by slow degrees that the difficulties can be surmounted so far as to allow the lower extremities of the child to be reached. There are, however, some circumstances which, to a certain extent, counterbalance these unfavourable conditions. In transverse cases, the shape of the uterus is considerably modified. Its greatest diameter is the transverse instead of the perpendicular, and consequently the lower extremities of the child are much nearer the os uteri than in vertex cases, or in arm cases where the waters have not escaped. It is therefore unnecessary, and indeed impossible, to pass the hand far into the uterus, and frequently a foot or arm can be brought down by the introduction of one or two fingers only within the os uteri, the bulk of the hand remaining in the vagina. I learnt this manipulation from Dr. Robert Lee, and I have several times been able to turn with only two or three fingers in the uterus. This is a great advantage, as the introduction of the whole hand under such circumstances increases the risk of lacerating or bruising the uterus, or causing the organ to rend itself by the violence of its own contractions.

Formerly, the dilatation of the os uteri in cases of constriction, or the relaxation of uterine spasm in cases where the waters had been long expelled, and the pain produced by the operation, were difficult and anxious matters. Bleeding to syncope, the hot bath, emetic tartar, and opiates, were relied on for these purposes. Chloroform is, I believe, preferable to any of these means, unless, indeed, bleeding should be required by some constitutional condition of the patient. The inhalation of chloroform relaxes contraction of the os uteri, the ostium vagina, and the body of the uterus, in addition to the immunity from pain which it produces. I am confident I have delivered, by turning, under chloroform, in cases of arm presentation, where it would have been impossible to have turned without its use.

The mode of seizing the fœtus, and completing the process of version, varies in the different circumstances in which turning is required. When we turn to save the mother from imminent danger, the operation should be performed as quickly as possible, due regard being had to the fact that a too rapid extraction of the child increases the shock of the operation. Under these circumstances, the two feet of the child should, if possible, be brought down, and gentle traction should be exerted, particularly during the pains, until delivery is effected in the manner described when speaking of footling presentations. When the waters are retained, it is astonishing what a small amount of traction will effect the version of the child. Simply holding one foot, or both feet, in the lower part of the uterus, while the organ is exerting its moulding and contractile efforts upon the rest of the child, will often cause the head or shoulder to rise, and the feet to descend. Holding on upon the feet or foot is all that should be attempted during the pains. Any traction that may be required should be exerted while the uterus remains passive, until the foot or feet descend through the os uteri. When the object in turning is not the dangerous state of the mother, but the condition of the child, the operation should be performed as leisurely as possible until pressure comes to be exerted on the umbilical cord. With this view, one foot, rather than two, should be brought down. We have seen that in cases where the breech presents, the mortality is 1 in 3½, while in cases in which the feet present, the mortality is 1 in 2½. In bringing down one foot, we assimilate the case to breech presentation. In a case in which one foot is brought down, and the other extremity remains flexed upon the abdomen, the circumference of the presenting part is from 11 to 12½ inches; when both feet come down, the circumference of the breech is from 10 to 11¼ inches. It is therefore safer to bring down one foot in turning when the operation is performed with reference to the fœtus, as the greater dilatation of the soft parts by the pelvic portion of the child favours the descent of the head and the defence of the umbilical cord from pressure. When it can be reached before the foot, there is an advantage in bringing down the knee, as the axis of the trunk and thigh is less than the axis of the trunk and the whole extremities of the child.

In arm presentations, the knee or foot of the side opposite to the extremity presenting should, if possible, be brought down, as, when this is the case, version is more easily performed than when the foot or knee of the same side is grasped. To effect this, the hand of the accoucheur should be passed up along the inner side of the arm presenting, which will guide it to the anterior surface of the child. If the foot is below the knee, it should be brought down. The rules for distinguishing between the foot and hand, or knee and elbow, have already been dwelt on, when the various presentations of these parts were under consideration. In the case of turning on account of pelvic deformity, the object being to bring the head through the pelvis as quickly as is consistent with the safety of the child, both feet should be brought down if possible. When one foot is perceived, and can be brought through the os externum, a tape or handkerchief should be put round it to enable the accoucheur to hold it more securely. The foot is slippery, particularly if the child is covered with caseous matter, and the fœtus has a tendency to be drawn upwards on the subsidence of every pain. In delivery, the same treatment is to be adopted as that directed in knee or footling cases, only that greater expedition in effecting delivery must be followed according to the special exigencies of the child or the mother. The forceps ought always to be in readiness to complete, if necessary, the delivery of the head. After all cases of turning, the patient should be carefully watched, with a view to the prevention of local inflammation.—*Lancet, Nov.* 29, 1856, *p.* 585.

139.—ON PUERPERAL FEVER.

By Dr. W. TYLER SMITH, Physician-Accoucheur to St. Mary's Hospital.

The great single cause of death amongst childbed women is Metria, or Puerperal Fever. There can scarcely be any hesitation in declaring that this disease ought hereafter to be as absolutely extinguished in this country as the plague of former times. It stands in the same category as typhus, and the rest of the zymotic diseases, which we may reasonably hope are in gradual process of extinction by preventive medicine. This extinction, if possible, cannot but be hastened by the earnest direction of the professional mind to the subject, since it is one which is very much within the control of medical men. As regards cure, or effective treatment, the disease in its various forms is utterly beyond all the known resources of our art; and there is no reason to imagine that we shall ever deal with it effectually, save in the way of prevention. In this point of view, everything in the history of the disease leads us to the conclusion that its virulence and frequency may be moderated to almost any extent, or that it may even, in process of time, be entirely annihilated.

And, first, as regards the Sporadic origin of this disorder. The state of the lying-in woman is one in which the blood and secretions are necessarily vitiated to a certain extent. Puerperal fever may almost be produced at will, by crowding a number of lying-in women together in the wards of a lying-in hospital. It is generated in individual cases, by inattention to the lochial and other secretions, the absence or neglect of ventilation, in the small rooms of the poor, where the lying-in chamber is often the abode of the rest of the family, and is used for all domestic purposes. In fact, where there is risk of typhus to the non-gravid woman, there is more than an equal amount of danger of metria to the puerperal woman.

In the way of Infection and Contagion, it may, I think, be demonstrated, that puerperal fever may be carried from one patient to another. There can be no doubt whatever that the exposure of a lying-in woman to the influence of the fomites or other impalpable or material agencies, derived from erysipelas, typhus, hospital gangrene, scarlet fever, small-pox, decomposing animal bodies, especially of persons who have died from any form of fever or inflammatory disorder, and other conditions, conveyed to the lying-in woman by the breath of those about her, or the hands and clothes of her attendants, will produce the disease. When the disease prevails in lying-in hospitals, and acquires a certain virulence, it is apt to prevail epidemically, all the lying-in women exposed to the danger becoming affected; and it is believed to prevail in certain districts and seasons, as an epidemic apart from all influences of contagion and infection.

The prevention of Sporadic cases belongs in part to the general sanitary questions of dwellings for the poor, draining, ventilation, water-supply, and other matters bearing upon the physical condition of the poorer classes of society; and in part to the attention given to cleanliness, the removal of morbid secretions, and other removable causes of disease, in individual cases. As regards lying-in hospitals, it may be questioned whether they have not proved in many respects an injury, instead of a blessing, to those classes they are intended to relieve, and certainly I believe the feeling of the profession is against any extension of the system of lying-in hospitals. They have demonstrated more emphatically than the facts derived from any other source, that puerperal fever is a contagious and a preventible disease. A large amount of the mortality from puerperal fever in large cities has occurred within their walls, and from these institutions it necessarily spreads by medical attendants, nurses, patients, and wet-nurses, to other lying-in women. It is evidently unsafe to congregate lying-in women, in any numbers, in the same building. This is the opinion of Dr. Robert Lee. Dr. Simpson has suggested that lying-in charities should consist of detached buildings rather than of hospitals. Dr. Ramsbotham declares himself very emphatically against such institutions, and relates that, he once refused a valuable appointment in a proposed new charity of this kind. Drs. Lever and Oldham, when the managers of the splendid income of Guy's proposed to erect a new lying-in hospital, exerted their influence against the origination of such a building. Dr. Copland, who for a long time held an appointment as consulting physician to a lying-in hospital, has given a very emphatic opinion respecting the dangers arising from such institutions. There can be little doubt that the suppression of such hospitals would effect a great saving of human life. No care that ever yet has been devoted can render the mortality in lying-in hospitals in this country, as favourable as the mortality amongst women confined under the most miserable circumstances at their own homes. Meantime, while lying-in hospitals exist, every care should be given to the ventilation of the wards, the allotment of sufficient space to each patient, and the removal of infected patients to separate wards. It has always been the laudable practice, when puerperal fever has prevailed in lying-in hospitals, to shut up infected wards, or to close the institutions altogether. What applies to lying-in hospitals, holds good also with respect to the admission of lying-in patients into the wards of general hospitals.

As regards the care of individual childbed women with reference to the sporadic development of metria, much depends upon the nurse. It is in this respect of the highest importance to have trained and educated nurses, understanding the subjects of diet and ventilation, and made well aware of the importance of cleanliness in all that relates to the management of the lochial and lacteal secretions. I have already referred to the relation of questions of drainage, the construction of dwellings, and other sanitary matters, to the sporadic production of puerperal fever. In this particular concern our profession is at present very much at the mercy of the public. We are not responsible for the great causes of zymotic disease which exist. With the improvements in our sanitary arrangements, puerperal fever will diminish like other diseases of the same class, or become far more easy of prevention.

When epidemic puerperal fever, or the conditions which give rise to it, exist, what can be done to prevent its development or extension? It has been proposed to keep lying-in women in suspicious circumstances, constantly under the influence of quinine, iron, or some other tonic or antiseptic remedy. But the extent of the powers of such medicines are matters rather of reasonable supposition or belief than of actual proof. I should be disposed to place great confidence, from what I have seen of its use, in the chlorate of potash as a prophylactic against puerperal fever, in doses of from five to ten grains three times a day. This drug appears to act by liberating in the economy, the oxygen and chlorine it contains.

In considering the spread of puerperal fever by Infection and Contagion, the different circumstances under which the poisonous element is circulated must be borne in mind.

It is obvious that women who are in the latter months of pregnancy, and in whom delivery may be expected from day to day, should be secluded as far as possible from proximity to patients suffering from the exanthemata, erysipelas, hospital gangrene, scarlet fever, putrid sore-throat, or any other disorder the miasm of which of conversion into the puerperal poison, and that any indirect communication by third parties or in any other way should be prevented to the greatest practicable extent. The relations of medical men, students, midwives, and monthly nurses, to the propagation of puerperal fever, require separate notice.

According to the present arrangements of our profession, there is no class of medical men exempt from the risk of conveying to puerperal patients, infectious or contagious matters from disorders capable of producing metria. Those who practise midwifery as a specialty, may meet with sporadic cases of puerperal fever capable of furnishing infectious matter, or they may be called to see cases of puerperal fever in consultation. Men holding hospital or dispensary appointments are also obliged to see the puerperal patients of such institutions. Surgeons in general practice, necessarily attend cases of infectious disease, convertible into metria, when conveyed to the lying-in woman. Surgeons holding hospital appointments, who perform operations and practise midwifery, as Dr. Simpson has forcibly pointed out, have to deal with lying-in women, and also with cases of an infectious and contagious nature, such as phlebitis or erysipelas. If students attend midwifery cases while their anatomical and surgical education is going on—and it is difficult to seclude themselves entirely from such subjects—they unavoidably expose patients to the risks arising from their dissections; from their attendance upon medical and surgical hospital practice; and also their pathological studies. Midwives frequently convey the disease from one patient to another, and the same may be said of monthly nurses.

Since it is impossible, or next to impossible, considering the frequency of infectious or contagious diseases, for any man in practice to escape entirely from the risks of infecting or inoculating lying-in women, especially when such patients are under circumstances favourable to infection or inoculation, the question arises as to the best mode of rendering these risks nugatory, or of destroying them altogether. In the Lecture on Puerperal Fever I have given the evidences which appear to me to prove that the blood and breath of the practitioner is a very common medium of infection. This would point to the propriety of neither going nearer to, nor remaining longer in, the vicinity of a patient suffering from puerperal fever, or any convertible infectious disease, than is necessary; and of not approaching so near to a recently delivered woman as to expose her to danger from the breath. Where the presence of infection is very evident, the propriety of changing the clothes is obvious, and generally practised; and many expose their clothes to the fumes of chlorine after exposure to risk. After touching any wound or purulent surface, the hands should be not be merely washed, but washed in a solution of chloride of lime, or some other disinfecting fluid. It would only result in good and in confidence on the part of patient and practitioner, were the practice common, if the hands were habitually washed in a solution of chloride of lime before attending a labour, and, in suspicious circumstances, before and after every vaginal examination. The fingers of the practitioner are evidently a fertile source of contagion. Dr. Simpson compares the fingers of an accoucheur who has been touching wounds or pathological specimens to the armed points used in vaccination. The small amount of matter conveyed by the hand, which is capable of producing disease, is almost incredible. A practitioner has been known to have an outbreak of puerperal fever in his practice,—to have freed himself by absence from home, so as to have attended cases without risk,—and then to have had a second outbreak after wearing a pair of gloves which he had worn during the first attack. It has been recommended that gloves should not be worn at all by accoucheurs, and certainly, considering the interests at stake, no precautions can be too minute under circumstances of suspicion. Keeping the nails closely cut, is another point worthy of attention. The condition of the utero-vaginal canal is, it must be remembered, the most favourable which can be conceived, for inoculation. The mucous surfaces are in a state of high excitement; abrasions and slight lacerations of the vagina and perinæum are extremely common. The removal of epithelium from the surface of the os uteri, at the time of labour, is almost universal, and it is to this part, of course, that the finger of the accoucheur is necessarily directed during his examinations. With respect to the attendance of students on cases of midwifery, some time ought to be set apart for their attendance upon midwifery cases, during which they should neither dissect nor attend the wards of the hospital, or the deadhouse. The dangers arising from the attendance of students upon lying-in women, when they are dissecting and attending autopsies, is exhibited in the most startling form by the statistics of the great Vienna lying-in-hospital. In this institution, in the six years from 1840 to 1846, 22,120 women were delivered. Of these, 2,260 died; the mortality being in the enormous ratio of 1 in every 10. The mortality has since been reduced to one in 74, and the reduction has dated from the time when Dr. Semelweiss enforced the regulation, that every student should, before and after each vaginal examination, wash his hands in a solution of chloride of lime, and also interdicted the students from touching dead bodies.

As regards the deaths arising from accidents and other disorders during childbirth, there is also much hope of diminishing the amount of mortality. Everything points to the importance of only allowing qualified persons or advanced students to attend women in parturition. In no other circumstance or operation whatever, where the mortality was 1 in 189, would ignorant women or unqualified persons be allowed to practise. The common feeling has been, that any one might safely attend a woman in middle life who had already borne children; but the tables I have given shew that rather more than 800 women perish in England yearly from the various accidents and diseases of childbirth, between the ages of thirty-five and forty-five. The attention and anxiety of practitioners are commonly given to first labours; but statistics show unerringly that the greatest and most fatal risks from accidents, &c., attend the delivery of women who are mothers of families, and above the age of thirty-five. It is in these women that death occurs most frequently from hemorrhages, puerperal mania, rupture of the uterus, exhaustion, &c., while they are comparatively exempt from the danger of puerperal fever. On the other hand, our care in guarding young lying-in women from their greater risk of taking metria should be most unceasing. The proportion of deaths from hemorrhage are very large. As far as the statistics from which I have quoted are available, the deaths from flooding alone are more than 10 per cent. of the total deaths in child-birth. Now, there can be no doubt that, with the appliances and means we at present possess, this large item of childbed mortality might in the hands of educated obstetricians be greatly diminished, and that death from flooding ought rarely to occur. Another large reduction might be made by substituting the induction of premature labour, or turning, or the forceps, but especially premature labour, for craniotomy. By the employment of turning or the forceps, the mortality is considerably diminished; but by the induction of premature labour the risk of death to the mother from the performance of craniotomy becomes very slight indeed. We have seen that in almost all cases the induction of abortion or premature labour might, by the exercise of foresight, be substituted for craniotomy. Taking the annual number of deliveries—the proportion of craniotomy cases—and the scale of mortality from this operation, we have the data for an approximative estimate of the maternal mortality caused by craniotomy in England. This would amount to nearly 400 deaths per annum from this cause alone, all or nearly all of which might undoubtedly be averted.—*Lancet, Dec. 27, 1856, p.* 692.

140.—ON PUERPERAL FEVER.

By Professor Murphy.

[In a former paper read before the Epidemiological Society by Professor Murphy, the author objected to the propriety of considering this disease as an inflammation, and also denied its identity to phlebitis. In the present paper,]

He proceeded to explain his views of the nature of the disease, that it was the result of a poison, and obeyed strictly all the laws of morbid poisons. Its action was definite and specific; the seat of that action was the serous surfaces, especially the peritonæum and uterine veins, chiefly because of the rapidity of their absorption. He denied that the action itself should be considered a specific inflammation, although he admitted that in certain cases inflammation may be excited. The term inflammation was used too extensively, being made to embrace actions perfectly opposed to each other. The design of inflammatory action is to preserve or repair organised structure, yet the term is given to actions that destroy it. Thus cancerous inflammation, tubercular inflammation, are expressions sometimes used in such a manner as to mean that cancer and tubercle were only forms of inflammation. So in the infantile lung post-mortem appearances were described as lobar, lobular, vesicular pneumonia, which were caused by collapse of the lung. The tendency of a poison is to destroy organisation; it is incorrect, therefore, to consider its action as a specific form of inflammation, which whenever it takes place is only for the purpose of limiting the action of the poison, and in this sense, just as the deposition of tubercle on the peritonæum is accompanied by peritonitis, so the puerperal poison may excite peritonitis; but the more powerful the poison the less peritonitis, and the weaker its influence the more distinctly are the evidences of inflammation observed. The action of the puerperal poison is on the blood; the quantity of fibrin is increased; the quality deteriorated. A profuse exudation of morbid fibrin takes place having some of the properties of healthy fibrin; it is not organisable, dissolves into a creamy substance, which melts into a fluid like pus, and mixing with serum forms the abundant "lactescent fluid" of authors. Exudations are not found in the veins because they are not adhesive, but dissolved fibrine, like pus, is found abundantly. The puerperal poison seems a contrast to the typhus poison, which destroys fibrine; yet the typhus poison absorbed by a parturient patient will cause puerperal, not typhus fever. It is the same with erysipelas. The action of the poison is modified by the dose as well as by the temperament and constitution of the patient. Puerperal fever does not attack all indifferently, but selects its victims. The most important feature of this law is the manner in which the characters of the disease are modified by the quantity of the poison absorbed. When it is in excess the patient may die without any other symptoms than a fluttering pulse, and cold livid surface. On the other hand, the dose may be so small that true inflammation is set up to arrest it, and thus peritonitis, phlebitis, or arthritis, take place. Hence the contradictions among authors; those who meet the latter class of cases calling the disease peritonitis, while those who witness the former stand aghast at symptoms which no theory of inflammation can explain. The coexistence of hooping cough and measles, of syphilis with erysipelas, proves that two poisons may each set up their specific actions in the same person at the same time. Erysipelas and puerperal fever have occurred in the same patient; but the author generally found erysipelas to precede or follow puerperal fever rather than accompany it. Erysipelas excited puerperal fever; but when the latter was at its height, the former disappeared. The author objected to the opinion that erysipelas and puerperal fever were identical, and did not consider those cases described by Good, in which the peritoneum was pale and colourless, as puerperal fever at all; they might be instances of erysipelas, if this poison ever attacks serous membranes. The author considered the poison as a contagion, just like the cadaveric poison which seems so similar to it; and briefly enumerated the symptoms of the disease, to explain the principle which should guide us in the treatment. According to its strength, the constitution makes an effort to get rid of the poison, whether by vomiting or purging, by the skin or by the kidneys. The observation of these efforts led Douat to use emetics, Boer kermes mineral, Deuman tartar emetic, and Armstrong salts and senna. If the effort fail, the poisoned blood accumulates at the centres of the circulation, which are relieved by a prompt and bold depletion. For such a purpose, 30, 40, or even 50 ounces of blood have been taken with decided benefit, but depletion should instantly follow the rigor, because, if time is lost, the very same treatment may only hasten dissolution. Camphor and turpentine have been recommended in the treatment of this fever. These remedies are not only stimulant but anæsthetic, and are useful not alone in supporting the constitution against the attack, but, by diminishing pain, they lessen nervous exhaustion. Reasoning on these facts the author tried chloric-ether with great advantage, and recommended it strongly to the consideration of the profession. General rules cannot be laid down for the treatment. If the dose of the poison be a maximum, nothing will save the patient; if in such quantity that the constitution can make some effort to get rid of it, much of our success will depend upon a close observation of the manner in which the effort is made. Prompt depletion has saved many a patient. The judicious use of emetics, purgatives, diaphoretics, and even diuretics has arrested the attack by aiding a natural effort. If the dose of the poison be a minimum, then peritonitis or phlebitis becomes prominent, and must be treated as such. Thus, what are called the inflammatory and the atexic forms of the disease merely signify the degrees in the dose of the poison. The author alluded to the importance of prophylactic agents, to ventilation, and the improvements lately introduced; to chlorine as a means of destroying the poison; and to anæsthetic agents as a means of blunting the sensibilities of the nervous system, and diminishing the activity of absorption. In this sense he considered chloroform extremely valuable, and so far from fearing its influence in causing puerperal fever, he looked upon it as a preventive.—*Med. Times and Gazette, March* 28, 1857, *p.* 326.

141.—ON PUERPERAL CONVULSIONS.

By Dr. W. Tyler Smith, Physician-Accoucheur to St. Mary's Hospital, &c.

[Convulsions may be divided into those which have a Centric, and those which have an Eccentric origin. The Centric again may be either intra-cranial or intra-vertebral. In speaking of intra-cerebral causes, Dr. Smith says]

Any mechanical or emotional stimulus applied in excess to the spinal centre itself, may excite convulsion during the puerperal state. In all women the excitement of the nervous system inseparable from parturition is a predisposing cause of the attack, which is provoked whenever any other sufficient exciting cause supervenes upon this parturient excitability.

A clot of blood, or serous effusion, occurring in any part of the brain, may cause convulsion by mechanical counter-pressure upon the medulla oblongata. In full states of the circulation, convulsion may be caused by cerebral distention alone. Here it must be the counter-pressure on the medulla oblongata which, in part at least, produces the disease. Any disease of the brain, of the membranes, or of the skull, capable of exerting internal pressure, may cause convulsion in this manner.

The intra-vertebral causes of convulsion consist chiefly of disorders of the spinal meninges, and upon conditions affecting the substance of the spinal centre itself. Probably excessive distention of this organ with blood excites convulsions; it is certain that the opposite condition, spinal anæmia, becomes a powerful exciting cause. In cases of irremediable uterine hemorrhage, convulsion is the common form by which death occurs; or a convulsion may occur from loss of blood before the patient is *in extremis*. In some cases of convulsion, arising from other causes, excessive bloodletting comes in at length as a cause of the fits, the therapeutics of the disease trenching distinctly upon its pathology. In animals killed by bloodletting either by experiments or at the shambles, convulsion always occurs during the act of dying.

The state of the blood circulating in the spinal marrow, as regards its constitution, is an important cause of centric convulsion. All agencies which interfere with the proper depuration of this fluid during pregnancy, or on the approach of parturition, contribute to render the blood a morbid stimulant to the spinal system. Such are the constipation and insufficient secretion from the bowels caused by the mechanical pressure of the gravid uterus upon the intestines. The albuminuria sometimes present, and which also appears to be caused by pressure on the kidneys and the renal vessels and nerves, accumulates noxious elements in the blood. This condition requires our special notice, as the most important and general of all the centric causes of puerperal convulsion. The encroachment of the abdomen upon the thorax must also render the due oxygenation of the blood difficult. Asphyxia invariably produces convulsions, and when it occurs during parturition, must necessarily produce this disease. The act of abortion from asphyxia seems to be almost a part of the general convulsion excited by the deprivation of oxygen. There are various other sources of sanguineous impurity, all of which contribute their quota towards rendering the blood morbidly irritating to the nervous centres. It deserves to be borne in mind that the depuratory functions ought, in order to preserve health, to be increased during gestation, as the *débris* of the fœtal, as well as the maternal system, have to be eliminated by the organs of the mother. Besides these forms of toxæmia, the state of the blood which obtains in fevers, or during the excitement of the first secretion of milk, may excite convulsive disorder. In all these cases the affection of the nervous system is centric, and not reflex.

These are the *Physical* causes of the disease; but there is another and very effective cause of puerperal convulsion which is *Psychical* in its character. I refer to the influence of Emotion.

Emotion, then, is a very important cause of centric convulsion in the puerperal state; important both on account of the severity of the attack when thus induced, the greater absence of premonitory signs, and the obstinacy of the disease as regards treatment. It is a very old and true observation, that convulsion is often met with in single women whose minds have been depressed by the sense of shame and misery inseparable from their condition during gestation. But any violent emotion of the mind, whether of joy or sorrow, the agreeable or disagreeable, may excite a convulsive attack. The return of a husband, the first sight of the infant after the hours of intense expectation, the pain and dread of parturition, or any intelligence whatever, suddenly communicated, may hurl the patient into convulsion. I myself saw a case in which a husband, returning from a distant and perilous journey a day or two after his wife's delivery, in the very act of greeting him she fell into convulsion; and instead of embracing a conscious mother, he held in his arms the rigid form of an epileptic. The fit is sometimes produced by emotional causes of a trivial character. Mauriceau related a very singular case, in which puerperal convulsion was excited by disgust caused in the mind of a patient by the entrance into her apartment of a coxcombical friend, whose dress was powerfully scented.

Such being the principal *Centric* causes of puerperal convulsions, let us now consider the *Eccentric*, or those caused by irritation of incident excitor nerves, acting through them upon the true spinal marrow, and its motor nerves.

First in importance is, Convulsion from Irritation of the Uterus itself and the Uterine Passages.

The statistics of labour demonstrate that puerperal convulsions occur with greater relative frequency when the head presents, than in other presentations. From this it has been inferred that its pressure on the os uteri was a principal cause; but the acute mind of Dr. Collins saw that this coincidence could not be considered as cause and effect, for convulsions frequently come on when the os uteri is entirely dilated, before the dilatation has commenced, or after delivery. Neither this eminent obstetrician nor any other has taken the pressure of the head on the vagina sufficiently into consideration, in connexion with the fact, that irritation of the vagina excites more extensive reflex muscular actions than irritation of the uterus itself. This gives a physiological explanation to the fact respecting the frequency of convulsions in head-presentations with first children, the irritation of the excitor nerves of the os uteri and the vagina being undoubtedly greater under such circumstances than any other. I might adduce numbers of cases in support of this view; in fact, any case in which all remedies have been tried in vain, but in which the convulsions cease immediately after delivery, contains its proof. It must always be borne in mind, when considering the causes of excito-motor diseases, that *irritation* of the peripheral incident nerves is not dependent on, or to be measured by, the mere intensity of pain. It has been shown again and again that the most powerful reflex action of the *vis nervosa* may be caused without any sensation whatever; indeed, in puerperal convulsions the causes operate sometimes during a state of perfect coma, or they may commence while the patient is in a profound syncope. The term irritation, when applied to spinal action, must therefore, as I have often observed, be received with its peculiar signification.

Convulsions may be brought on by the mere presence of the fœtus in utero, there being no other exciting cause, or they may occur from the causes of spinal irritation depending on the first changes which take place in the uterine system preparatory to labour, before the os uteri has commenced its dilatation. They are sometimes caused by the irritation of a dead fœtus. The mere distension of the uterus by the liquor amnii, particularly in cases where there is a large quantity of this fluid, has appeared to give rise to convulsions.

When a convulsion has once happened, the fit may be repeated from causes of uterine irritation apparently trivial. Irritation of the os uteri is one of these. Denman relates the following of a case which occurred to him:—"When the os internum began to dilate, I gently assisted during every pain; but being soon convinced that this endeavour brought on, continued, or increased the convulsions, I desisted, and left the work to Nature." A similar case was once related to me by Dr. Heming. In other cases, fits have been produced by the hand of the accoucheur in the operation of turning, or by the irritation caused by the use of instruments. Irritation of the os externum is also a powerful excitor of spasmodic action. Many women die from the violence of the convulsion caused by the passage of the child through the external parts. It has even happened that successive fits have been caused by irritation of the uterus from injudicious attempts to apply an abdominal bandage.

The following are two interesting cases of puerperal convulsions from irritation or excitation of the excitor nerves of the uterus and uterine passages, the irritation being conveyed to the spinal marrow, and reflected back on the motor nerves of the whole spinal system, so as to cause the convulsions. The first is related by Dr. Ingleby:—

"A highly esteemed friend of mine once found it necessary to pass his hand into the uterus, for the purpose of removing an adherent placenta, the ergot of rye having been previously administered. The introduction was carefully performed. *The straining and opposition to his efforts on the part of the woman were exceedingly great; and at the moment when the operator's hand had reached the organ, my own hand making counter-pressure on the abdomen,* the patient became violently convulsed, and died in less than a minute."

The second is from Dr. F. H. Ramsbotham, who relates a case of convulsions in which the fits were relieved by bleeding, and the woman remained fifty hours after the attack before labour came on. In less than five hours she was delivered without any recurrence of the fits; but as the placenta did not come away, Dr. Ramsbotham was summoned, two hours after the expulsion of the child. He remarks that, "Under no greater anxiety than usual when the placenta is retained, I proceeded in the ordinary way to remove it. *The moment I had passed my hand completely into the uterine cavity*, the patient turned upon her abdomen, and without uttering any expression of pain, went into a convulsion."

Puerperal convulsions may arise from Irritation of Intracranial Excitor Nerves. It may appear a nice distinction to classify convulsions arising from cerebral pressure on the medulla oblongata, and convulsions caused by irritation of the membranes, under different heads. Yet the one is centric, the other eccentric. Cerebral pressure affects the medulla oblongata directly, meningeal irritation reaches it reflexly, so that some distinction is really demanded. The known intracranial causes of puerperal convulsion of a reflex character are, bony projections and exostoses, inflammation of the meninges, the extension of red softening of the brain to the membranes, or the extension of irritation from a coagulum in the substance of the brain. Thus, in puerperal convulsion, we have to study the brain and its envelopes under many and very important points of view; 1, as the seat of some of the most important changes which occur during the fit; 2, as the seat of an important class of centric causes of convulsion; and 3, as the source of irritation acting upon the spinal centre in reflex forms. As a reflex cause of convulsion, we must study the brain as we would the uterus, the stomach, the intestines, &c.

Irritation of the Bowels, especially of the lower part of the intestinal canal, is well known to cause convulsions under other circumstances besides those connected with the puerperal state. Thus worms, the severe action of purgative medicines, the collection of indurated fæces in the bowel, have all been known to cause epilepsy and the convulsions of children. It cannot therefore be wondered at, that when the excito-motor system is under the additional stimulus of either pregnancy, labour, or the puerperal state, these and similar sources of excitation should cause puerperal convulsions. Gastric irritation has long been looked on as a cause of puerperal convulsions, though the true rationale has never been given by obstetric writers. Irritation of the bladder is a less frequent, though undoubted, cause of puerperal convulsions. Other causes than those which have been given occasionally operate on the spinal system, but all act in accordance with the principles already advanced. Mr. Ingleby suspected that irritation of the mammæ might cause convulsions. Not long since, I saw a case of puerperal convulsion for which no other cause could be assigned than excessive soreness of the nipple, with mammary induration. The skin, too, as an important excito-motor organ, must be studied in relation to puerperal convulsions. The same may be said of the liver, and other organs supplied by the pneumogastric nerve.

Such are the principal causes of puerperal convulsions, to the *modus agendi* of all of which the physiology of the true spinal marrow goes far towards supplying a perfect explanation; and it must be remembered that, wanting this mode of solution, the disease formed, confessedly, one of the enigmas of modern pathology. To give a summary of the whole subject, the true puerperal convulsion can only occur when the central organ of this system—*the spinal marrow*, has been acted on by an excited condition of an important class of its incident nerves—namely, those passing from the uterine organs to the spinal centre, such excitement depending on pregnancy, labour, or the puerperal state. While the spinal marrow remains under the influence of either of these stimuli, convulsions may arise from two series of causes: those acting primarily on the spinal marrow, or *centric*, causes; and, secondly, those affecting the extremities of its incident nerves, or causes of *eccentric* or peripheral origin. Though the subject admits of this division, several causes may act together, and centric and eccentric causes may be in operation at the same time. I have made no attempt at a division into predisposing and exciting, proximate and remote causes, because it is evident that a cause which in one case is the exciting or proximate, may in another be the predisposing or remote cause. Thus, irritation of the uterus may be the predisposing, and irritation of the stomach the exciting, cause, in one instance; while in another, irritation of the uterus is both the predisposing and the exciting cause; hence any such division must be to a great extent, arbitrary, and devoid of precise meaning.

In the treatment of puerperal convulsions, we have to consider remedies which act on the central organ, the spinal marrow, and those which affect the extremities of incident spinal nerves. I propose, in the first instance, to consider the remedies of direct or centric action. Of these, bloodletting is the most important.

The action of bloodletting on the spinal marrow is greatly modified by the condition of the circulation. In fulness of the vascular system, it is the most powerful sedative of spinal action we possess. Hence, venesection is the great remedy in the simpler form of puerperal convulsion, where the disease chiefly depends on stimulation of the spinal marrow by excess of blood, or on the mechanical pressure exerted by the blood on that organ, together with the counter-pressure of the distended brain on the medulla oblongata. In such cases, bleeding should be performed with a view to its sedative action on the spinal marrow, and to avert the mechanical effects of vascular pressure from this organ. Alone, it will frequently be sufficient to subdue the disease, particularly when the fits come on before the beginning of labour or after delivery. But another most important intention of bloodletting should never be lost sight of,—namely, that of preserving the brain from injury during the convulsion. Besides the *primary* cerebral congestion, which may have been the cause of the attack by its counter-pressure on the medulla, the convulsive actions themselves exerting great muscular pressure on the whole vascular system, and causing, as they must, the greatest turgidity of the vessels of the head, are dangerous sources of fatal cerebral congestion, or of serous or sanguineous effusion. As in the case of epileptics, women in puerperal convulsions frequently die of apoplexy, produced by the immense pressure exerted on the cerebral column of blood during the fits. It is in great measure from the effects of bloodletting in warding off accident from the brain that bleeding is so general in this disease. The due recognition of the distinct operation of bloodletting on the cerebral and spinal systems is of the utmost consequence. In plethoric states of the circulation, it is in this disease *curative* in its action on the spinal marrow, *preventive* in its action on the brain.

In the absence of definite ideas regarding the effects of bloodletting in this malady, it has been sometimes pushed to excess, or practised where it should have been altogether avoided. In the numerous cases where, besides vascular excitement of the spinal marrow, some irritation of spinal excitor nerves exist as a conjoined cause of convulsion, repeated bleedings will often fail to subdue the disease, unless the *eccentric* irritation be at the same time removed. When irritation of the uterus, the rectum, or the stomach, is in part excitor of the convulsion, bleeding alone cannot be relied upon. It may at first diminish the impressibility of the *central* organ, rendering it less susceptible of the incident irritation; but if persisted in to a large extent without the removal of the *eccentric* irritation, it becomes in the end positively injurious, by increasing instead of diminishing the excitability of the spinal marrow.

In vascular plethora, depletion is undoubtedly a sedative to the spinal system; but when the circulation is reduced considerably below par, loss of blood becomes an actual excitant to this organ. Hence it is that the reports of those who have most pertinaciously followed bloodletting, exhibit the loss of a greater number of patients than those who have been more cautious in this respect. The propriety and extent of venesection must be estimated, then, not by the violence of the disease, but by the state of the circulation in the interval of the fits, and with especial reference to the different effects of vascular plethora and vacuity upon the spinal centre. Patients rightly bled in the first instance, may be subjected to successive depletion until loss of blood itself becomes the cause of the final seizures.

Similar remarks would apply with almost equal force to the other parts of the common antiphlogistic regimen. Nearly allied to the *modus operandi* of bleeding are the effects of nauseating doses of emetic-tartar, which have been found so serviceable in the treatment of puerperal convulsions by Dr. Collins. It is more than probable that this remedy acts as a sedative on the spinal system through the medium of its effects on the circulation. In the convulsion occurring in delicate anæmic women, bleeding is generally inadmissible, becoming in fact, under such circumstances, an exciting cause of the disease. Still, in cases approaching to this state, cautious bleeding may be sometimes necessary to preserve the brain from injury, but here venesection requires to be followed promptly by stimulants: such cases are, however, rare in comparison with those in which fulness of the circulation exists at the onset of the disease.

During the attack of convulsion the glottis is partially or entirely closed. The greatest authority on this point, Dr. Marshall Hall, questions if true convulsion could ever occur without this state of the glottis, and the cerebral and spinal congestion which it occasions. We know that the epileptic attack is sometimes warded off by the dash of cold water on the face or chest, so as to excite a sudden inspiration and the dilatation of the glottis. It is on the same principle, that of exciting a strong inspiratory act, that we stimulate the nostrils or sprinkle the face with cold water in syncope. Excitation of the incident nerves of inspiration has in the same way been known to prevent the puerperal convulsion. It is probable that in extreme cases tracheotomy may afford relief, and I should not hesitate about resorting to this operation when the patient was in danger of dying during the fit.

[Stimulation of the nostrils, and dashing cold water on the face have been known to terminate convulsions. Cold is valuable applied to the head, it acts as a sedative, and lessens the distended state of the cerebral circulation, and if used in the form of the douche it would also excite inspiration.]

Some striking distinctions must be made respecting the administration of Opium in puerperal convulsions. If a dose of opium be given in this disease in a full state of the circulation, before bleeding, there is a dangerous aggravation of the disorder; while if it be given in puerperal convulsions in an anæmic subject, or after excessive depletion, it is of great service. If in a case of convulsions, opium be given at the commencement, it is dangerous in its effects; but the same medicine is frequently valuable in the advanced stage of the same case when the vascular system has been powerfully depleted. Thus it would appear evident that in convulsions with a full state of the circulation, opium is a *stimulant* to the spinal marrow, while in convulsions with anæmia, it is distinctly *sedative*. It is certainly an important point in practice, that the effects of opium in puerperal convulsion depend on the state of the circulation; that in plethoric or inflammatory conditions it is always dangerous, while in anæmia and debility it may always be given beneficially.

[Mental excitement of every kind should be soothed and avoided; perfect quiet and repose are of the utmost consequence. During ordinary labours care must be taken that during the expulsive stages, when the neck becomes tumid, this is not increased by voluntary efforts. If the cervical symptoms be severe and threatening, venesection must be practised as a preventive measure. When albuminuria exists during pregnancy, if not remedied before labour comes on, and if convulsions take place we can do but very little towards the depuration of the poisoned blood. If the fit evidently proceeds from gastric irritation, you must relieve it by an emetic. It may be caused by intestinal irritation, and you must take care not to increase this by drastic cathartics; a copious warm enema, to which may be added castor-oil or turpentine, is by far more preferable and effectual than aperients.]

But the great seat of reflex irritation in puerperal convulsion is in the parturient canal. There is only one direct mode in which uterine irritation can be allayed during puerperal convulsion, except by the removal of the fœtus. This is by removal of the liquor amnii. In cases of puerperal convulsion, puncturing the membranes takes off a considerable amount of distention from the uterus; diminishing the size of the organ, and the quantity of blood circulating through it. Hence, though it renders the uterus more active, by bringing its parietes into contact with the fœtus, it renders the organ itself less irritating to the general spinal system. The evacuation of the liquor amnii is to the uterus what the partial action of an emetic or an enema is to the stomach and intestines. In convulsion from uterine irritation, much may be done by the avoidance of all unnecessary dilatation and interference with the vagina and os uteri. During convulsions, all operations upon the parturient canal, whether they consist of examinations, dilatation of the os uteri and the vagina, the artificial removal of the fœtus, or the extraction of the placenta, should be performed with the greatest care, and with the remembrance of the ease with which renewed fits may be excited by any irritation of the uterine passages.

The relation of Artificial Delivery to puerperal convulsion is a matter of deep interest. Some obstetricians have recommended that it should always be performed by turning, craniotomy, or the forceps, when the fits are obstinate and severe. In deciding this point, the particular characters of individual cases must be considered. The general principle which we may deduce is, that whenever artificial delivery can be effected with less irritation than would be produced by the continuance of the child in the parturient canal, and its expulsion by the natural process, it is advisable that it should be performed, if the situation of the mother be perilous. It must be with reference to this principle—namely, to the irritation of any particular operation, and the irritation of labour itself—that turning, craniotomy, or the forceps, must be decided upon. All these operations have destroyed patients; and, on the other hand, numbers have died undelivered, from uterine irritation. The question of interference is one for which no arbitrary rule can be laid down, but which must be decided in each individual case by the particular circumstance, due reference being had to the excitability of the uterus under the stimulus of the fœtus, and under artificial interference. The point to aim at should be, never to produce more irritation than we remove, and not to destroy the patient by an excessive temporary irritation instituted for her permanent relief, by the entire evacuation of the parturient canal. Of course, the greater the operation necessary for delivery, the greater is the deliberation necessary before it is commenced. In manipulating upon the uterus under such circumstances, we must never for a moment lose sight of its reflex connexion with the spinal marrow. Such appear to me to be the principles upon which we must attack the uterus in puerperal convulsion.—*Lancet, Oct.* 25, 1856, *p.* 451.

142.—VESICO-VAGINAL FISTULA, CURED BY A NEW METHOD OF OPERATING.

By I. B. Brown, Esq., St. Mary's Hospital.

[The patient was admitted under the care of the author at St. Mary's Hospital with a small fistulous opening close up to the os uteri, cummunicating with the bladder. This was in consequence of a tedious and instrumental delivery a little more than two months previously. All the urine passed through this opening, and none through the urethra.]

The health of the patient being carefully attended to, especially the removal of some long worms from the bowels, he (Mr. Brown) determined, after consultation with some of his colleagues, to operate, after a method devised by Dr. Bozeneau, of Alabama, in America. Accordingly, on the 15th of October, the patient being placed under chloroform, and put in the position for lithotomy, a leg being held by each assistant, a firm retractor, being placed within the vagina, was held firmly backwards and downwards by a third assistant; and, each side of the vagina being held back by two other retractors, the bladder was seized, just at the juncture of its neck with the body, by a strong pair of Vulsellum forceps, and held firmly upwards and forwards by the right hand of the assistant holding the left leg. The fistulous opening was then with great difficulty brought into view, and the mucous membrane divided, by a sharp knife, completely around the opening, about the eighth of an inch in depth. Three silver-wire sutures, eighteen inches long, were then passed by a needle held by the porte-aiguille, and which are shown in Fig. 1. The two ends of each wire were then brought together by an instrument, as represented in Fig. 2, thus leaving the parts in apposition (Fig. 3). A silver button, described in Fig. 4, was then carefully passed over the end of each double suture, and a perforated shot passed over each wire, as shown in Fig. 5, and pressed down upon the button, and then

FIG. 1

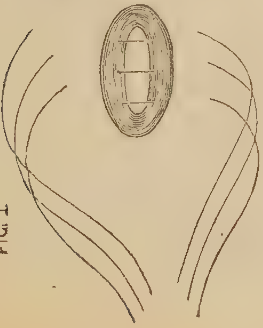


FIG. 2

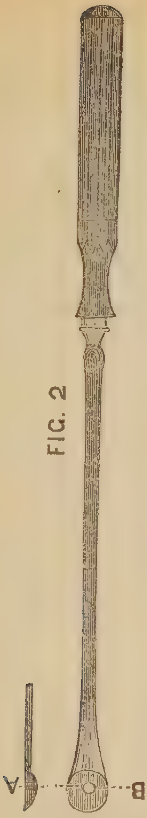


FIG. 3

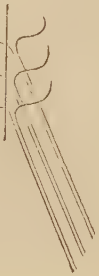


FIG. 4

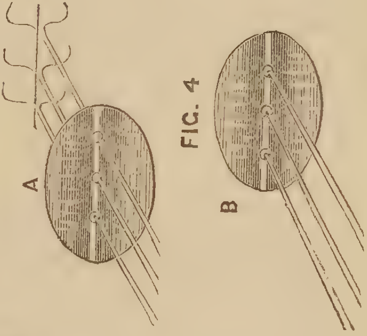


FIG. 5

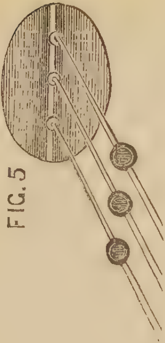
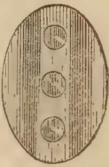


FIG. 6



firmly pressed by a pair of long strong forceps. The wires were then cut off close to the shot, leaving the parts as represented in Fig. 6. A piece of lint dipped in sweet oil was then introduced within the vagina, the patient placed in bed on a water cushion, on her side, and a bent catheter with a bag attached to it was inserted within the bladder, and allowed to remain there. Two grains of opium were gsven directly, and one grain every four hours afterwards for the first twenty-four hours, and afterwards one grain every six hours; and a generous diet, with wine, allowed daily. The lint was removed on the second day, and the vagina washed out night and morning with tepid water. All the urine passed freely through the catheter. On the 24th, he carefully removed the button and the sutures, and found the most perfect union had taken place throughout the whole extent. On the 26th the bowels were relieved, for the first time, by castor oil and enema, and the catheter was removed for three hours, at the end of which time she passed urine comfortably, with no escape per vaginam. On the 27th, the catheter was removed entirely, and she was allowed to sit up and walk about a little. On the 28th, she was up and about all day; she was able to retain the urine for four hours, and to pass it well. On the 30th he made a most careful examination, and found the parts firmly united, and without the slightest escape of urine, even after a long and tedious investigation. At that date (Nov. 8) she continued well. Mr. Brown observed that this method of operation had convinced him that cases hitherto intractable to treatment would be found to be curable by this operation.—*Lancet, Nov.* 15, 1856, *p.* 541.

143.—PERFECT CURE OF VESICO-VAGINAL FISTULA.

By James Paget, Esq., St. Bartholomew's Hospital.

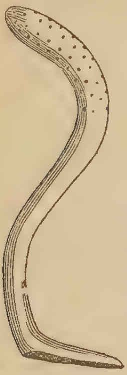
[The successful treatment of the following is in a great measure attributable to Dr. Harris, the Resident Clinical Assistant to St. Bartholomew's, for his judicious and zealous attention to its after management.

Alice Smith, aged 35, admitted June 28, 1856, with constant running away of her urine. She had been twice pregnant; after her first labour she had great difficulty in retaining her urine; after the second, which was two years ago, she had suffered from entire incontinence of urine. On examination it was found that,]

In the anterior vaginal wall, about an inch and a-half from the orifice, was an opening of an oval shape, (its long diameter extending transversely across the vaginal wall), sufficiently large to admit the tip of the forefinger. Its edges were hard and tense, and the tissues in its immediate neighbourhood somewhat puckered. A catheter passed by the urethra could be felt through the opening.

The operation was performed on July 22, at 2 p.m. The wires and apparatus were placed in at 8 p.m. the same evening.

Operation.—The patient was supported, with her nates raised, as if on her hands and knees, and the cavity of the vagina exposed with the help of Dr. Sims' retractor. A curved cut was made through the mucous membrane of the vagina, about one-third of an inch behind the posterior border of the opening into the bladder, and extending quite across the anterior wall. The mucous membrane of the vagina behind this cut was raised from the posterior and inferior wall of the bladder, so as to form a flap from one-third to one-half an inch deep, and from one to two lines thick. The ends of this cut were then connected by another carried through the mucous membrane, and across the front wall of the vagina, about one-third of an inch in front of the opening into the bladder; and a similar but more narrow flap was raised by dissecting the mucous membrane forwards. The portion of mucous membrane circumscribed by these two cuts, including the borders of the abnormal opening and the portion of the mucous membrane of the bladder everted through it, was then dissected away from the wall of the bladder and removed. The opening into the bladder was thus enlarged to about two-thirds and a-half of an inch in its diameter; it was bordered (as seen from the vagina) by the muscular coat of the bladder, exposed for about one-third to half an inch: and this was surrounded by the reflected flaps of the mucous membrane of the vagina.



Self Retaining Catheter.

The advantage of this catheter is, that when once introduced, it keeps in by its own peculiar shape. A piece of india rubber tubing is placed over its end, and the urine thus conveyed under the bed into the receptacle.

It was now necessary to wash out the bladder filled with clots of blood; and the patient being deeply affected by the chloroform and her constrained posture, the rest of the proceedings were deferred for four hours.

The apparatus for union was that recommended by Dr. Marion Sims, with only the addition of a small piece of cork placed between the shots and the bars on which they severally rested. Each wire was drawn, with silk, from behind forwards, through the mucous membrane of the vagina; traversing it through points about half an inch distant from the borders of the flaps above described, and through the angles of connexion between those flaps and the muscular coat of the bladder. When the bars were fixed down with the shots clamped on the wires, the flaps were brought into exact contact, and formed an upraised ridge which extended quite across the front wall of the vagina. The edges of the flaps, along the top of the ridge, were united with two ordinary silk sutures.

A catheter, adapted by Dr. Harris, on Dr. Sims' plan, was placed in the bladder.

July 23. Patient had passed a good night. Catheter did not irritate. Was directed to lie on her side. Continued to do well. No urine escaped the wound. Catheter withdrawn, and cleansed every morning.

[The woman remained under observation for some weeks, there was no incontinence of urine by the urethra, her cure was perfect in every respect.]—*Med. Times and Gazette, Dec.* 13, 1856, *p.* 592.

144.—ON VESICO-VAGINAL FISTULA.

By Dr. Maurice H. Collis, Surgeon to the Meath Hospital, &c.

The causes of vesico-vaginal fistula, as given by Dr. Churchill in his valuable work, and modified by Mr. I. B. Brown, are as follow:—

"1. The wall of the vagina may be wounded during criminal attempts to procure abortion.

"2. Retention of a pressure within the vagina, inducing inflammation and subsequent ulceration.

"3. The long impaction of the head of the child in the pelvis during labour, by pressure inducing inflammation, ending in ulceration (sloughing?) and perforation.

"4. Careless or improper use of instruments in attempting to deliver, especially if the bladder be not empty.

"5. Corroding cancer of the uterus or vagina may perforate the bladder.

"6. Stone in the bladder is sometimes a cause, from the bladder being pressed between the head of the child and the stone within."

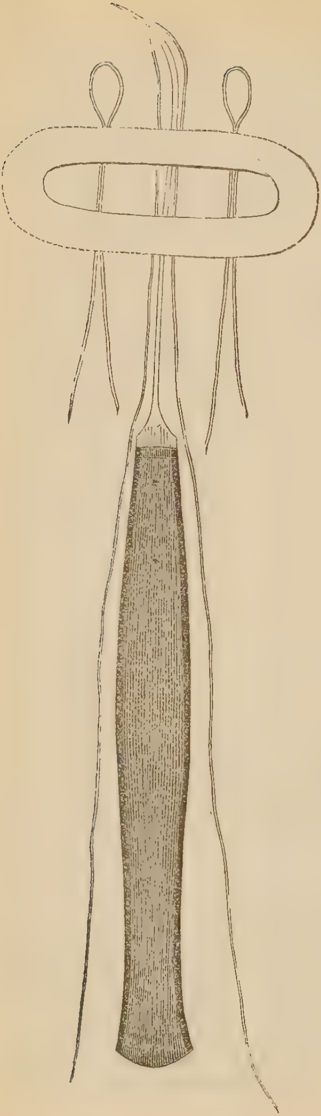
By far the greater number of cases results from the third and fourth of these causes; and as my experience is limited to such cases, whatever remarks are made in this paper must be taken as referring to them alone.

There seems to be a difference, while the affection is recent, in the condition of the edges of the fistula, according as it results from sloughing or from an incised wound. In the latter the edges are regular in outline, pliable, and of even thickness. In the former, owing to loss of substance, they partake more or less of the character of a puckered, callous cicatrix. The difference is of importance as regards the cure, for which it is essential to have an abundance of areolar tissue, well supplied with vessels. The absence of this healthy tissue is a main cause of the failure of operations; we see this in all old fistulæ; the urine constantly flows over their edges; and, by keeping up irritation, renders them thick and callous; hence, not only do the stitches tear out, but the semi-cartilaginous margins refuse to unite by the first intention. The coexistence of a tough cicatrix and of cartilaginous infiltration is well seen in the form of fistula that is situated close to the neck of the uterus, and which is generally the result of sloughing from pressure of the head.

The fistula I allude to is small, seldom larger than the urethra in diameter, and is situated at the very lowest point of the fundus of the bladder, so that not only does every drop of urine pass through it, but, in addition, the current is incessant, as the bladder cannot retain a drop. Every one conversant with these cases has seen them resist every variety of treatment, often reduced to a mere point by cautery, and refusing to close. These fistulæ have hitherto been seldom closed by suture. In one of my cases, this portion remained unclosed, although the remainder of the rent, a long one, united readily by the first intention; the edges were thin and supple anteriorly, but about this portion were thick and callous, and, while the stitches held well elsewhere, they sloughed out rapidly here.

When the fistula has existed for any length of time, its edges almost universally take on an unhealthy condition; the exceptions are where the fistula lies far forward, and is only at intervals irritated by the passage of urine. The period at which this alteration occurs will vary in almost every case. I do not think that any perceptible induration will be found sooner than three months after the injury. This period is, therefore, most suitable for operation, as adhesion will be more readily obtained between the edges. Another reason for selecting an early period is the condition of the bladder and urethra. These soon lose their capacity for dilatation when they are not in use, and offer powerful obstacles to the cure of the fistula; the bladder may also be prolapsed in various degrees, and become an additional source of misery to the unfortunate patient. Other complications may exist, such as adhesion of the walls of the vagina, and narrowing of this passage from sloughing of its walls. Such adhesions require to be treated with great caution, as severe inflammation sometimes follows the division of them. In one case I divided an adhesion of this kind distant an inch from the vulva, and the operation, though apparently trifling, was followed by rapid and fatal peritonitis. Examination at the time, and afterwards, showed that the incision was not within two inches of the peritoneum, and that the inflammatory action had commenced in the unhealthy, ill-organized tissue of the cicatrix, and had spread to the uterus and peritoneum. The patient was a strong, healthy countrywoman, apparently a most unlikely person to be so attacked; the incision was made preparatory to an operation for the closing of a large gap in the floor of the bladder.

Various operations have been suggested for the closure of fistulæ, and put in practice with variable success. Many of these will be found described in Dr. Churchill's book; others in Pancoast's Operative Surgery, or similar works. The principal points in which they differ from one another are the mode in which raw surfaces are obtained, and the kind of suture adopted. Every succeeding operator endeavours to improve on those who have preceded him in one or other particular, and most of them have exercised their ingenuity to devise instruments for facilitating the execution of both: as regards instruments, the simpler



the better. Brass spatulæ, made strong, and bent at a right angle, so that the portion to be inserted into the vagina shall be about three or four inches long, and less than an inch wide (as suggested by Dr. Sawyer), will be found the best means for bringing the fistula in view. One of these will be required for each side, one to depress the fourchette, and a fourth sometimes to raise the urethra. A staff in the urethra will often answer better than the fourth spatula, and its point may be made useful to draw the bladder out of the way if its upper wall be prolapsing, or to push forward the anterior lip of the fistula. The best position for operating will, generally, be that for lithotomy. I have, however, in two cases found it easier to get the parts into view and into reach by placing the patient standing in front of a table, and bending forward on it, so as to have her body at right angles to her legs; in this, by slightly separating the legs, the parts were brought into view from behind by the aid of the dilators. The other instruments required are a long, straight knife; a common fixed needle, as shown in Fig. 1; a long pair of ordinary forceps with toothed points. With these, and good assistants, there will be no difficulty in paring and stitching any part of the vagina. If the surgeon have a spear-pointed knife, slightly bent on the flat, an inch or so from the point, it will be a little easier to operate on the edges in the way I shall describe presently; but I have found a long, straight bistoury answer very well.

The mode of obtaining a raw surface which I adopt is different from the usual plan of paring off a slip of membrane all round the fistula. It was suggested to me by Mr. I. B. Brown's method, and by that of Professor Pancoast of Philadelphia. The former pares away the mucous membrane from the margin of the fistula, and also from the surface of the vagina, all round it, to an extent of three lines; by this means he gets an extensive raw surface, part of which is pretty sure to unite. Dr. Pancoast's plan is to split the posterior border of the fistula to the extent of half an inch, and to pare the anterior into a wedge-shaped tongue; this tongue is then inserted into the groove made by the splitting of the posterior border, and four raw surfaces are thus brought in contact. The plan that suggested itself to me in my first case was, to split the entire margin of the fistula all round, and to the extent of three or four lines or more, and to open out the flaps so as to bring the raw surfaces of the opposite sides of the fistula to face each other. Fig. 2 represents in outline a section of the splitting of the margins. A sufficient number of sutures are now inserted in the manner represented in Fig. 1. The dotted line shows the extent to which the margin is split. It is easy to pass the sutures; the needle is threaded with a long thread, and thrust through the anterior flap; so that its point comes out at the centre of the flap; it is then pushed on through the posterior flap, entering, of course, on its raw surface opposite the point of exit in the anterior flap; the loop of the ligature is seized by the forceps and held tight while the needle is withdrawn: we thus have a double ligature passed with the loop hanging out beyond the posterior flap, and the two ends hanging out in front of the anterior; when a sufficient number have been passed, a quill of bougie or India-rubber cord is passed through

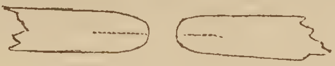


Fig. 2.

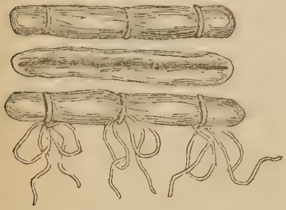


Fig. 3.

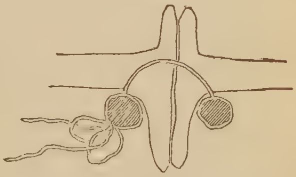


Fig. 4.

the loops; the ends are then carefully pulled until the quill lies in its proper place; the two ends of each ligature are then tied successively over a second quill, as represented in Fig. 3. Fig. 4 is a sectional view, meant to represent the relative position of the raw surfaces, the quills, and ligatures.

A few points require to be noticed further:—

1st. The splitting of the flaps is incomplete unless it be continued into healthy areolar tissue; the ill-organized cicatricial tissue will probably ulcerate under the inflammatory process.

2ndly. Judgment is required in placing the ligatures at a proper distance from each other, and from the edge of the fistula; if the flaps are in a perfectly healthy state, about a third of an inch should intervene in both cases; but if there is much infiltration of the flaps, the interspaces must be greater.

3rdly. The ligatures must not be tied too tight; allowance must be made for tumefaction, or the parts will slough, especially if the quills used be at all rigid. I am indebted to Dr. Thorpe, of Letterkenny, for suggesting the use of india-rubber cord in place of pieces of bougie; its elasticity prevents strangulation, and at the same time insures coaptation of the flaps, and is peculiarly suited to irregular fissures.

4thly. The time for the removal of the ligatures will also vary: in unhealthy structures they will commence to cut out in forty-eight hours; while they will hold five or six days, or even longer, in that which is healthy.

5thly. It must be borne in mind that all urine should be got rid of as soon as secreted, and a catheter must consequently be kept in the bladder. Either Marion Syms' S-shaped silver catheter, or a male gum-elastic will answer this purpose, and it should occasionally be examined to see that it is permeable. After three or four days' use of the catheter, the urethra will remain patulous, and the catheter may be removed if it become clogged; the frequent removal of the catheter for the purpose of cleaning it being more likely to do mischief than its disuse.

6thly. It will be found that the inner or vesical flaps are more sure to unite than those included in the ligatures. This should be particularly borne in mind in the selection of cases for operation. It will also account for the failure of many well-executed operations, more especially of those in which simple paring of the edges is resorted to.—*Dublin Quarterly Journal, Feb.*, 1857, *p.* 119.

145.—*Perineal Suture for the Relief of Prolapsus Uteri.* By I. Baker Brown, Esq.—[In some observations by Prof. Fergusson, at King's College Hospital, the merit of this operation was claimed for Dr. Savage; in reply to this Mr. Brown says]

I wish, therefore, to assert at once my claim to be the first English surgeon who performed it, and who has through good report and evil report advocated and performed it, and on all occasions brought it under the notice of the profession. When I first performed it many years ago, I did not know that any other person in the world had done so. However, after I had brought out my work upon the subject, I learnt that Dr. Fricke of Hamburg had performed one of a somewhat similar character. I was also informed by Dr. Savage that it had been performed by Dr. Geddes of America in a more radical manner than myself, as he took away much more tissue. However, at the time I proposed mine I did not know of either of these two. My operation has since been recognised and performed by many men, including Dr. Simpson of Edinburgh, Teale of Leeds, Dr. Fünke of Frankfort, Drs. Savage, Tanner, and Barnes, and Messrs. Borlase Child and Spencer Wells in London, as well as many others both in Germany and America, all of whom have constantly spoken of myself as the original advocate of the operation, and acknowledged its efficacy as well as certainty. I would also wish to observe, that very few cases require so complete a closure of the vagina as appears to have been done in the two cases operated on by Mr. Fergusson, as it renders it impossible for the woman again to become pregnant, or to be delivered, whilst by performing it on my plan, both can take place without detriment. Many of my cases have subsequently become pregnant, and been delivered without any tearing or rupture of the newly-united parts, and to all intents and purposes as well as though no operation had been performed.—*Med. Times and Gazette, April* 11, 1857, *p.* 372.

146.—*Perineal Operation in Prolapsus Uteri.*—Mr Fergusson has recently performed two operations on the perinæum for old established cases of prolapsus uteri; the womb in each case projecting from the vulva, and presenting a tumour about the size of a fœtal head. The perinæum having slowly yielded, offered no support for the womb; which immediately after its reduction, at once re-descended on the patient standing upright. In the case last operated on, amylene was administered, and the patient placed in the lithotomy posture. The left labium was then seized with a pair of long forceps, and a strip of skin and mucous membrane dissected off; the incision commencing on a level with the urethra, and ending at a corresponding point on the opposite labium. Thus a sort of triangular tongue, including all the loose redundant skin, and a crescentic strip of mucous membrane, (having its broadest part at the rectal aspect of the vagina,) was removed in one piece. The raw surfaces left were brought closely together by deep quilled-sutures of stout silk, (entering the skin three-quarters of an inch from the edge of the incision,) the ends being passed over pieces of bougie in lieu of quills. A few ordinary sutures were then applied to the margins. Mr. Fergusson stated that he had, many years ago, performed an operation somewhat similar, and that it had also been done abroad, but the results not being satisfactory, it had fallen into disuse. The particular point of the present operation was not only the apposition of a large extent of new surface for firm support, but the contraction of the calibre of the dilated vagina. He had recently seen several cases treated on this principle by Dr. Savage, of the Samaritan Hospital, and also been present during some of Dr. Savage's operations. These having turned out well, he had determined to pursue the same plan in the two cases recently witnessed. Up to the present time, both cases are going on favourably.—*Lancet, April* 4, 1857, *p.* 345.

147.—ON THE EFFECTS OF BELLADONNA IN ARRESTING THE SECRETION OF MILK.

By John Burrows, Esq., Liverpool.

[In illustration of an article by Dr. Goolden, which will be found in the volume for Dec. 1856 of this work, the author cites the following striking case. The child was dead owing to the nature of the labour, and the resuscitative measures adopted did not prove successful. On the fourth day the breasts assumed their maternal functions; on the seventh they were full, tense, painful, and knotty, with a slight inflammatory blush, though spirit lotion had been applied.]

I directed the areola, and a circle extending half an inch beyond it, of each breast, to be painted thickly over with the extract of belladonna, reduced to the consistence of thick paste by the addition of the acacia mixture. As the late Mr. C. T. Haden recommended the use of colchicum for the purpose of controlling arterial action in inflammation of the breasts and nipples, with the same intention I gave the following mixture:—

> ℞. Infusi rosæ comp. ℥vj; magnesiæ sulphatis ℥j; vini colchici ʒiij; aquæ menthæ piperitæ ℥xv. M. Fiat mistura cujus sumatur ℥j 4tâ quâque horâ.

The result was most satisfactory. In thirty-six hours after the application of the extract, the mammæ were cool, pale, and flaccid; and the knots softened and reduced in size. I advised the repainting of the areolæ; and, in two days after—*i.e.*, three and a half days from the first application—they were so reduced in size that they were smaller than during the latter period of pregnancy, and the knots could scarcely be felt. The effect was truly marvellous, and resembled the magic touch of the necromancer, rather than the therapeutic influence of a medicinal substance.—*British Med. Journal, March* 14, 1857, *p.* 217.

148.—ON ARTIFICIAL ENUCLEATION OF UTERINE FIBROID TUMOUR.

By Thomas F. Grimsdale, Esq., Surgeon to the Lying-In-Hospital, Liverpool.

[This operation, as usually performed, is no doubt a formidable proceeding; but in properly selected cases it may occasionally be the means of saving life. Its wholesale adoption, however, as is practised by some, is very dangerous. With respect to the cases, Dr. Grimsdale says]

In my opinion, the operation for enucleation, may with propriety be resorted to.

1stly. There must be present some symptom, as hemorrhage, intractable, and of so serious a nature, as if allowed to continue, would almost inevitably sooner or later destroy life.

So long as the tumour is quiescent, attended by no formidable symptoms, it would manifestly be highly improper to propose any interference, that might of itself seriously compromise the patient's safety; but in the presence of frequent and exhausting hemorrhages, inevitably fatal in their tendencies, it becomes a question of anxious interest to both surgeon and patient, whether or not any operation can afford a fair prospect of relief.

2ndly. The tumor should be a single one, as may generally be known by its globular form.

On this point I wish to correct a misconception I believe to be prevalent, viz.. as to the infrequency of single fibrous tumors of the uterus. Most writers on these subjects say in general terms, or lead their readers to infer, that it is quite the exception to find a solitary tumor of this kind; in the great majority of cases say they, the tumors are plural or even in considerable numbers. Now in opposition to this, Mr. Pollock's records of post mortem examinations, at St. George's, show that in more than one half of his cases the tumors were single.

3rdly. The tumor should be surrounded by hypertrophied uterine tissue. On this point I shall say more presently, I may remark now, that when such is the case we can always by auscultation detect an uterine bruit more or less loud; and I should be unwilling to operate unless this was present.

4thly. The more the tumor bulges inwards towards the uterine cavity the better.

5thly. A time should if possible be chosen, at which the system shall have rallied somewhat from the effects of the antecedent hemorrhages. This may seem at first sight, correct absolutely and universally, but we must bear in mind, that during hemorrhage, the uterus is often acting expulsively. Dr. Locock mentions, and other observers corroborate the remark, that in regard to intra-uterine polypi, they are occasionally to be felt presenting at the os during hemorrhage, and not in the intervals. Now it may so happen, that during an attack of hemorrhage, with expulsive action on the part of the uterus, the tumor is brought much more within reach, and as regards *its situation*, altogether more favourable for operation than at any other time. I have seen, and have notes of one such case, which I observed some six years ago, long before I had any thought of operating on these tumors.

6thly. The tumor should be proved to be of the firm fibrous variety. This may be known by the exploring trocar.

7thly. The mere size of the tumor, unless it be of uncommon magnitude, I do not consider after the experience in the case narrated, as particularly prohibiting operation. No doubt the larger the tumor, the greater will be the risk in the latter stages of the process.

I shall now proceed to consider some points in the method of operating.

First. How is the tumor best reached, by knife or caustic; and in what position should the opening be made?

Second. Is the tumor to be enucleated at once by instruments; or is the expulsive action of the uterus to be waited for?

Let us consider the first query, as to where and how the opening through the uterine wall is best made. The French and American surgeons seem to prefer the knife, and make their incision within the cervical cavity. Dr. Simpson, in the case he has recorded, used caustic potass, and applied it one inch beyond the os uteri. I presume, although it is not so expressed, that in this case the cervix must have been involved in the tumor. As to the position for the opening, my own opinion is decidedly in favour of the French and American practice; it appears to me a far safer proceeding, to make an opening to the tumor through the uterine structures, from within the cervical, or even uterine cavity, than to operate in the cul de sac of the vagina, behind the os, thus taking the chance of perforating the peritoneum twice. In many cases, it would of course be impossible to operate in this way without making the double perforation of the peritoneum, which must of necessity add materially to the danger. If we select the canal of the cervix as the site for the opening, we shall I believe be almost compelled to operate by incision; however completely the os be dilated with sponge tents, it is next to impossible so to fix the desired spot in the area of the speculum, that the caustic can with certainty be applied to it; at least, such is the result of my experience.

Second. Is the tumor to be enucleated at once by instruments, or is the expulsive action of the uterus to be waited for? Before we can answer the question whether the expulsive action of the uterus is to be waited for, we ought to be able to say whether the organ is, in such of opinion among pathologists: Simpson, Lisfranc, Hooper, and others, seem to think that in all, or almost all cases the uterine tissue is increased. Paget says "The Uterus in its growth around the tumor, maintains a normal type, though excited to its growth, if we may so speak, by an abnormal stimulus; it exactly imitates in vascularity and muscular development the pregnant uterus, and may even acquire the like power, and at length by contractions like those of parturition, may expel the tumor spontaneously separated."

Mr. Stafford Lee, who has examined many museum preparations to ascertain the truth on this point, finds that the increase of uterine tissue is not constant. He says "In Guy's Hospital Museum there are several preparations: in some of which the increase of uterine substance is very great, while in others there is a thinning of the fibre over the tumor. In Dr. Reid's case the walls were an inch thick: and in University College Museum there is an extremely large tumor, surrounded by very thin uterine walls."

These facts prove that hypertrophy of the uterine tissue around fibroid tumors is by no means invariable. Indeed specimens are now and then met with, in which the tumor is accompanied with a distinct and very decided atrophy of the normal uterine structure. Dr. Lee records a case (*Med. Chir. Trans.*, vol. 19, p. 94) in which the uterus had become so much atrophied as to resemble a bladder. Again, although there may be no decided atrophy of structure on that aspect of the tumour nearest the uterine cavity, on the opposite or peritoneal surface, there may be little if ought else than a covering from this membrane. This condition is occasionally seen in post-mortem investigations.

These are pathological facts unquestionable, and of extreme importance as bearing upon the point now under consideration. They are conclusive to show, that if the attempt were made to enucleate *all* uterine fibrous tumours, how hopeless it would be, in certain cases, to wait for any uterine expulsive action. But as the present proposal is not to operate indiscriminately, but in selected cases, it remains for us to enquire into the condition of the uterine tissue in those cases designated as favourable for operation.

I know of no pathologist, except Rokitansky, who has endeavoured to make out the rationale of this varying condition of the tissue surrounding uterine fibroids.

He says (I quote from the 'Sydenham Society's edition,' vol. 2, p. 296), "The changes in the uterus, consequent upon the presence of one or of several large fibroid tumors, are numerous and important, by reason of the diagnostic characters they afford. In the first instance, the volume of the uterus increases in proportion to the number and size of the tumors, the fibrous polypus causes an enlargement of the uterine cavity corresponding to the size of the polypus. The increase organ, are of greater interest. The hypertrophy appears as a development of the uterine tissue, resembling that occurring in pregnancy; it varies in degree. In reference to the latter subject, the question presents itself—by what means the different degrees of hypertrophy are determined, and on account of the occasional passive condition and the occasional atrophy of the uterus, it is necessary still further to generalise, and to ask how it happens that under some circumstances the uterus becomes hypertrophied, in others remains unchanged, and in others again becomes atrophic? In answer, we offer the following remarks:—

a. The nearer the fibroid growths approach to the uterine mucous membrane, and project into the cavity of the uterus, and thus maintain the mucous membrane in a state of irritation and inflammation, the more palpable is the hypertrophy of the uterus. It is most fully developed, so as to resemble pregnancy, in the case of the fibrous polypus.

b. Hypertrophy of the Uterus appears to be encouraged by a vascular state of the tumor, by the latter being less dense and capable of rapid growth.

c. As also by the development of the tumor, during or shortly after the period of conceptivity.

d. The size of the tumor exerts no direct influence upon the origin of hypertrophy or atrophy.

e. Atrophy undoubtedly results very rarely from fibroid tumors, nor must we forget that they are not unfrequently developed in the uterus during the period of decrepitude, and that they increase very slowly on account of the universal state of marasmus. In this case the atrophy of the uterus is entirely independent of and antecedent to the fibroid tumors."

These remarks, coming from so accurate and so cautious a pathologist, must be allowed to carry great weight. They show that, contrary to the expressed opinion of some other authorities, (who, by the way, appear to have formed their judgment chiefly if not entirely from museum specimens, a point of some importance), they show, I say, that atrophy of tissue around uterine fibroids is quite the exception, and hypertrophy of tissue quite the rule. And further, these observations of Rokitansky point out those characters of the tumor, or in the circumstances attending it, which favor hypertrophy of the uterus. They coincide entirely with those characters and circumstances, which I have already specified, as offering the most favourable conditions for operation. I cannot omit the remark, that my statement of necessary conditions was made quite independently of Rokitansky's deductions, and from very different data; his deductions were drawn entirely from post mortem investigation, mine chiefly from physical diagnosis during life. That one corroborated the other, is an important argument in favour of the correctness of both.

It is not then on pathological data alone that I would rest my statement, that in those cases, otherwise favourable for operation, hypertrophy of the uterus is always present. This might do very well for pathologists, but for the operating surgeon something more is needed; he must have evidence that each particular case is no exception to the general rule. And this I think it is in our power to obtain. Presumptive evidence of uterine hypertrophy may be obtained by the sound; if the cavity of the organ be much elongated, and at the same time dilated, the great probability will be that hypertrophy exists. Possibly also, if the tumor be confined to the posterior wall, by far its most frequent situation, the anterior wall may be *felt* to be hypertrophied. But, I believe, the most certain evidence is to be gained by auscultation; if hypertrophy be present to any extent, there will be a distinct uterine souffle which in some cases, even rivals that of pregnancy in loudness. This is just what we might expect, for although the uterine souffle of pregnancy, or placental bruit, as it is sometimes called, was formerly supposed to have its seat in the placenta, we now know that it is produced in the uterus itself, and is heard loudest over the site of the placenta, in all probability simply because at that situation the uterine vessels are largest. Now Rokitansky makes the remark which any one may verify, that the hypertrophy of tissue round uterine fibroids closely resembles that occurring in pregnancy; hence we should expect *a priori* to have more or less uterine souffle, and such is the fact. It varies a good deal in different cases, and probably from other causes than a varying degree of hypertrophy, but so it does in ordinary pregnancy. The fact however remains, and so important an one do I consider it, that I should be unwilling to operate in any case in which it was altogether absent.

I have thus shown from trustworthy pathological data that in cases otherwise favourable for operation, we may always expect hypertrophy of the uterine tissue; and further, I have pointed out the means by which, in any particular case, the presence or absence of this condition may with tolerable certainty be determined. It may now be well to ask—

Will the hypertrophied uterus always exert its expulsive action; are we justified in waiting in this expectation?

In all the recorded cases in which this action was waited for, it has not failed to occur, either with or without the assistance of ergot. In one case, the whole process of dilatation and expulsive action was extremely slow, but assimilated in every other respect most closely to the ordinary phenomena of labour. In Dr. Simpson's case, the action seems to have been somewhat less slow, and he remarks on its similarity to labour.

But the whole process seems to me most interesting and curious in its relation to the determining cause of ordinary parturition.

Among the numerous theories that have been advanced as explanatory of this, one of the latest and most rational, is that the loosening or decadence of the membranes from the interior of the uterus, the result of the effete degeneration of the structure of the decidua towards the full term of pregnancy, determines it. One method of bringing on labour by separating the membranes with the finger or catheter, or the water douche of Kiwisch would seem to favour this idea. How the separation of the membranes should excite uterine action we do not know—we recognize only the fact. In our operation for enucleation we bring on uterine action after the same fashion—having made an artificial os, we separate the cellular attachments of the tumor to the uterine wall, and wait the result. Generally we have seen that uterine action follows, first dilatation, then expulsion. As in ordinary parturition a single attempt at the induction of labour may not succeed, so in this, it might be necessary, and I am inclined to think it would be in every case desirable, to repeat the operation of separation at moderate intervals, so as to make the process as certain and rapid as possible. At all events, from the evidence at present available, it would appear that the uterus not only *can* but *will* exert itself to expel the exposed and partially separated tumor.

Arrived thus far, we can safely approach the question whether the tumor should be enucleated at once, or the uterus be allowed to expel it either partially or entirely.

I myself incline towards the latter method: the arguments in favour of it are,—

First. That it is a more close imitation of the process by which nature occasionally effects the same object.

Second. That there is less risk of hemorrhage.

Third. That the cavity left on the removal of the tumor is smaller, and the uterus is more likely to contract on it.

These remarks of course apply only to large tumors. The only argument I see against it, is the great risk of irritative fever, from the absorption of the discharges.

This argument is undoubtedly a strong one, as evidenced by the condition in which one patient was at the time of the removal of the tumor. But I have some suggestions to make for the modification of the operation, and the after conduct of it, which I think will materially lessen this risk.

I would propose first, that the original incision through the uterine wall be considerably larger, in proportion to the size of the tumor, than the one made in our case.

Second. That the separation of the cellular attachments of the tumor be as extensive as possible, and this part of the operation be repeated according to circumstances, either with a bougie or water douche.

Third. That if possible the cyst of the tumor be not cut into.

Fourth. That ergot be given in the manner usual in labour.

Fifth. That the hand be introduced for the removal of the tumor, as soon as the dilation of the artificial os will fairly admit of it.

With the adoption of these suggestions, I should much prefer the slower operative procedure.—*Liverpool Medico-Chirurgical Journal, Jan.* 1857, *p.* 71.

149.—*Can Fibrous (Muscular?) Tumours of the Uterus be removed by Absorption?*—The idea seems to be somewhat gaining ground in the profession, that fibrous tumours of the uterus, even of very large size, are not only susceptible of removal by absorption, but that certain measures of treatment may be adopted which are largely influential in procuring that desirable termination. Thus we are strongly advised to send our patients to drink the Kreuznach waters, to subject them to long courses of the iodides, the sal ammoniac, or the bromides; and even the external use only of the bromide of potassium has been vaunted with some confidence as effectual to the same end. In relation to this question it may not be without interest to our readers to place on record the present opinions of two physicians, who have, respectively, under care two of the largest specialities for the diseases of women in the metropolis, besides having enjoyed extensive opportunities of observation in private practice. On discharging a woman from his ward in St. Bartholomew's the other day, who had been under care for a uterine fibrous tumour, Dr. West ordered that a course of the bromide of potassium should be persevered with. At the same time he stated to his class, that he had no expectation of benefit from it, and was inclined to refer to erroneous observation the so much boasted cases of removal of fibrous tumours by medical treatment. He had no faith whatever in such stories, having never known a tumour of that kind disappear, excepting when sloughed out into the vagina. He had tried the recommended remedies, and had sent some of his patients to use the Kreuznach waters. In cases of induration and enlargement of the uterus itself he had known the latter effect much benefit, but in fibrous tumours had never in a single instance been able to note any positive decrease in size. An opinion almost exactly similar to the above, but in yet stronger terms, was expressed by Dr. Oldham to his clinical class, at Guy's, a few weeks ago. He stated positively that he did not believe in the possibility of the absorptive removal of such growths, and appealed to all surgical experience as to whether such a result was ever obtained with tumours of analogous nature in other parts of the body, where their size from time to time could be accurately estimated. It is of course admitted, on all hands, that fibrous tumours of the uterus may cease to grow, and may even atrophy, and to a certain extent diminish, but this process, when it does occur, is believed to be exceedingly slow, and unconnected with remedial measures. That they may undergo calcification in parts, and that such change is generally attended by drying of texture, and much diminution in bulk, are acknowledged facts in pathological anatomy; but such changes, as far as we yet know, appear to depend upon accidental circumstances in the condition of the tumour, rather than on treatment. For instance, the tumours which become the seat of chalky degeneration, are usually those which have become partially detached into the abdominal cavity, and lost the chief part of their vascular supply, or, possibly, the change may sometimes occur as the result of the advancing age of the patient, and the atrophy of tissues generally.

The appellation of "muscular" has been claimed by Vogel for these tumours, since their structure is, he states, always identical with that of the uterus itself. Mr. Paget, to a certain extent, confirms this opinion, and some very careful examinations by Dr. Bristowe (Pathol. Trans. Vol. iv. page 220) do so most fully. During pregnancy their muscular elements increase in proportion to those of the uterus itself, and also assume a much more perfect development. The distinction is important, and well worthy of further attention, but at present it would, perhaps, be premature to change the name. To Dr. Oldham belongs the credit of having been, we believe, the first English observer who taught this doctrine. His paper (Guy's Hospital Reports, Vol. ii. Second Series, page 105) appeared, however, a year subsequent to Vogel's "Illustrations of Pathology."—*Med. Times and Gazette, Feb.* 21, 1857, *p.* 191.

150.—ON THE NATURE AND TREATMENT OF OVARIAN TUMOURS.

By MM. Cruveilhier, Huguier, Jobert (de Lamballe), and Velpeau.

The treatment of ovarian disease has lately occupied the attention of several meetings of the Academy of Medicine in Paris, and, from the interesting discussions to which it has led, we subjoin an epitome of the more important observations and conclusions advanced by the members of that society.

According to M. Cruveilhier, the encysted dropsical tumours of the ovary *(les hydropisies enkystées)*, constitute an affection of a purely local nature, and one which yields only to surgical treatment, and in which it seems doubtful whether any medical treatment whatever exercises the slightest influence on the progress of the disease. Some ovarian dropsies, says he, are absolutely incurable, being beyond the reach of either remedial or palliative measures. Among such tumours are the areolar, the vesicular, and multilocular cysts where the cells are very numerous, and do not communicate with each other. On the other hand, there are cases where the disease is not only amenable to palliative treatment, but susceptible of cure. Such are unilocular cysts where the contents are serous or albuminous, and can be evacuated by puncture, and also multilocular cysts where the cells communicate. Those tumours, which are composed partly of unilocular, but are combined with areolar, vesicular, or multilocular cysts, M. Cruveilhier considers incurable.

The palliative treatment, he remarks, has for its object merely the evacuation of the contents of the cyst; while the aim of the curative treatment is to obtain the contraction and adhesive inflammation of its walls. When, from the gelatinous or viscous nature of the contained matter, a puncture, even with a large trocar, is insufficient for its evacuation, the incision of Ledran should be substituted, care being taken to prevent the escape of fluid into the peritoneum.

Instead of proscribing all attempts at a radical cure of ovarian dropsy, as laid down of late, he recommends a careful investigation of those remedial measures which have been proposed, and employed in practice. In the present state of our knowledge, says M. Cruveilhier, the curative treatment of ovarian disease should be adopted with great caution, even where the circumstances appear most favourable. The principal danger in such treatment, as well as in that of a merely palliative nature, he believes to be purulent inflammation or gangrene of the cyst; and that, in the method of procedure to be adopted, we should be guided by this indication. The period demanding our interference, with the view of attempting a cure, being, in his opinion, only when function begins to be interrupted by the size of the cyst.

M. HUGUIER, again, after dilating at considerable length on this subject, comes to the following conclusions:—

1st. Ovarian cysts are not of so benign a nature as is generally supposed, but, on the contrary, they are on many accounts, of very serious importance.

2nd. It is an error to suppose that, in the majority of such instances, life is prolonged to an advanced age: the younger the patient, the more speedy is the fatal termination.

3rd. Unilocular cysts, which have not undergone any organic alteration in their parietes, and with serous, sero-sanguineous, or albuminous contents; cysts which originate in extra-uterine pregnancy; and purulent cysts, are those in which a cure is most easily obtained.

4th. Areolar and multilocular cysts are not to be interfered with, unless, while being of small size, they occasion much suffering or inconvenience; in such cases there is less risk in adopting the ordinary surgical treatment than where they exist of larger dimensions.

5th. The most favourable period for operating is, when the tumour is not yet very large, but has begun to occasion suffering to the patient, or to give rise to the disturbance of function.

6th. The employment of only one mode of treatment seldom succeeds; most frequently several must be combined.

7th. Among injections, those of iodine appear to be employed with most success; they are seldomest followed by bad consequences, and are most likely to prevent purulent infection.

8th. The cyst should, as far as possible, be acted upon through the vagina, rather than through the abdominal walls.

M. JOBERT (de Lamballe), after advancing his views upon this subject, stated, as a *resumé* of his remarks, that, in his opinion, the pathological anatomy of ovarian tumours ought not to be taken as the guide for their therapeutical treatment, since it is, in all cases, upon the cystic membrane that injections act in determining the effusion of plastic material and the occurrence of adhesion. Whether the cyst may have originated from a vesicle, from a pyogenic membrane, or from a sero-mucous sac, it will be found susceptible of obliteration and cure, without having suffered any other change or degeneration.

Punctures, repeated at short intervals, may produce obliteration of the cyst by an albuminous deposit; and the mode of cure by injection, he regards as similar to what takes place in hydrocele under the same treatment.

Cysts of long standing, and which have attained a large size, although they be not cured by injections, are yet capable of being beneficially modified by them, inasmuch as the quantity of exudation is diminished under their use. Injections of iodine, or alcoholic injections, are sufficient to produce a greater or less degree of inflammation in the cyst, when brought into direct contact with its internal surface; and such injections, made into the liquid matter contained in the cysts, never occasion any accident, while they, at the same time, produce adhesive action. The tumour may reappear after its obliteration, and a repetition of injections seems necessary for the complete cure of ovarian cysts.

Simple puncture, says M. Jobert, should be preferred, when the cysts are much inflamed and degenerated. It ought to be early performed, in order to avoid the risks of morbid changes in the cyst, its rupture, diffuse peritonitis, acute or chronic, and exhaustion of the patient's strength.

Incision he considers necessary in some exceptional cases, such as those of circumscribed abscess in multilocular cysts.

Electricity, M. Jobert also mentioned as capable of exciting absorption in some multilocular cysts; and the extirpation of ovarian tumours, he concludes, by characterizing as an operation, dangerous in its nature, and one which ought to be resorted to only in very few cases.

M. Velpeau, in addressing the Society, said, that he questioned whether the duration of ovarian cysts could with certainty be determined. The views entertained on this subject were far from being so clear as might be desired—the statistics collected with reference to it setting forth ten years, six years, and two years, as the average duration of the disease. But an important point to be ascertained was, upon what grounds were these statistics founded. It must be kept in mind, that, so long as a cyst of this nature does not exceed the dimensions of an egg, or even an orange, we never know of its existence; and where a medical man has a tumour thrust upon his observation, it may be of the size of a child's head, far less a sac capable of containing ten or twenty litres of fluid, the date of its commencement is perhaps eight or ten years back. We therefore do not, and cannot, know what is the average duration of this disease.

I believe, says M. Velpeau, that, in the great majority of cases, patients live longer than six years, perhaps seven or eight years, after these tumours become appreciable; and as, in many instances, without any treatment, life is prolonged even for fifteen or eighteen years, it would be unwarrantable to adopt any measures which involve great danger in themselves; yet, at the same time, since, sooner or later, this disease leads to a fatal termination, there is evidently room, in one sense, for operative interference. With regard to the pharmaceutic treatment of the affection, it appears somewhat remarkable that MM. Cruveilhier and Trousseau should deny the possibility of cure in this manner, as I am confident, says M. Velpeau, of having seen such cures in my own practice, although it may be impossible for me to convince others of this circumstance.

When the cysts are of small size, their spontaneous or accidental rupture may, as has been stated, lead to their cure; but, in many cases, death is also a frequent consequence. According to statistics given by Tilt, in seventy cases of rupture, thirty deaths resulted—a proportion which does not make such a mode of cure very desirable. Besides, it is not a termination of frequent occurrence. I have seen it happen on two different occasions, and in both with fatal effects.

I come now to speak of simple puncture—a palliative puncture—a remedial measure resorted to on all hands. I have observed, with regret, that a certain passage in my first address to the Academy, should have given rise to some very exaggerated notions of the serious nature of this operation. M. Trousseau has referred to the table of twenty-one cases of simple puncture, as they have been drawn up by Southam. Among these cases, four, it appears, died in twenty-four hours, three in the course of the first month, and fourteen at the end of a year. I cannot admit this proportion, although similar mortality, and even greater, is found among the statistics of several English and German practitioners. Thus, in thirty-six cases given by Lee, we find three women dead within twenty-four hours after the puncture was made, six in some days, and twelve in a year; in short, twenty-four deaths during the course of the first twelve months. The statistics of Kiwisch are not less dreadful: of sixty-four cases of puncture, we find nine women dying within twenty-four hours, and others in less than a year. Among 132 cases cited by Fock, we find 74 deaths in less than a year. The four cases in which I myself have seen death follow closely upon the operation of puncture—and it was only in four cases—do not rank among ordinary instances. In upwards of thirty years' practice, I have punctured 310 or 312 times, and, according to my notes and recollection, the women have survived from six to eighteen years. One of them, on whom I have repeated the operation thirty-eight times, has lived for fourteen years.

How, then, are those alarming statistics to be explained? Simply by their being framed under different circumstances. Favourable in the hands of one man, they become unfavourable in the hands of others; for example, if puncture is performed *in extremis*, the operation may be speedily followed by death. But I need not dwell longer upon the reason of the discrepancies existing between the results obtained by our brethren of England and Germany, and those every day falling under our own observation. In my own opinion, the operation of palliative puncture is not dangerous, except in certain complicated cases. If death occasionally supervene upon its performance, it is only in the same way that we find blood letting occasionally followed by phlebitis.

With reference to the radical cure by extirpation, there is an admirable paper by M. Ch. Bernard, physician to the hospitals, published in the *Archives* of this year, in which I observe a table as follows: of 292 cases of extirpation of the ovary, 100 deaths, and 100 cures; ninety-two incomplete operations, and of these thirty terminating fatally. Now, I ask what is meant by the operation being incomplete? It is this: the abdomen being laid open to an extent proportioned to the volume of the cyst, adhesions being discovered which render the removal of the tumour impossible—this wound is brought together again,—and—thirty women in ninety-two die after such an operation, while simple puncture kills twenty-one in forty! Another calculation, cited by M. Bernard, gives seven deaths in thirteen cases of ovariotomy; and a third gives fifteen in fifty. Such results I can scarcely comprehend. We consider a small opening made in the peritoneum, as is done in strangulated hernia, a most serious matter; while it would seem to be a simple operation to lay open the whole abdomen, to dissect the peritoneum, as if for an anatomical demonstration, and to remove a tumour, in doing which, too, we require to employ such a number of ligatures. The fact is somewhat remarkable. Can it be that unsuccessful cases are hushed up, and that those published as successful ones, are not so in reality. Whatever it may be, let us keep this in mind, that fifteen women did die in consequence of the *incomplete* operation; and, had the cyst in these cases not been interfered with at all, in all probability the patients would have lived out the ordinary term of those labouring under this disease.

I would, therefore, altogether discountenance the performance of extirpation, although I rather inclined to advocate it in 1839; to render it justifiable, life would require to be threatened, and to render it rationally practicable, the tumour would require to be of small size; but then, in this condition, it would not be inconsistent with the duration of life for many years. We must not envy our American brethren their practice of ovariotomy: surgery in France is at the present day in an excellent position, at once combining boldness and caution, while it appears to have renounced all rash operations; wherever it interferes, it is desirous that the operation should be less dangerous than the disease.

The next subject to which I would refer, is that of puncture, followed by irritating injections into the cysts in the ovary. This method is not in every respect new, as it is similar to that followed in the treatment of hydrocele. Towards the close of the last and the commencement of the present century, the surgeons of England and

France have occasionally injected hot wine into cysts of the abdomen, and even into the peritoneum itself, and it is now thirty years since M. Jobert has injected alcohol into ovarian tumours. How is it then, that such an operation has, at the present day, created such an excitement? It arises from the bad consequences which followed those former trials of it—from the number of deaths which occurred as their result. But this state of matters has been materially altered, since, from innumerable examples, I demonstrated that injections of iodine, in the case of hydrocele, determined an inflammation of the tunica vaginalis, less painful in its nature, and of a moderate degree of intensity; that a portion of the liquid injected might be retained with impunity, and that it was even advantageous to let it be so; and that, should a few drops of the iodized fluid escape, it did no great harm. Moreover, I also observed that iodine did not give rise to inflammation, except where it came in direct contact with the tissues; thus, hot wine could never be risked as an injection in congenital hydrocele, lest, as there was good reason to fear, a spreading inflammation should be set up, and which might extend by contiguity to the peritoneum. Such inflammation is so little to be dreaded when we employ a watery solution of iodine *(de l'eau iodée)*, that, in injecting the sac of a hydrocele which communicates with the cavity of the abdomen, it is scarcely necessary to make any separation for the moment between the two cavities by the pressure of the finger at the inguinal canal. Having observed this property in iodine, I have used it with success in cysts of the spermatic cord, in old hernial sacs, for the radical cure of hernia, in cysts of the groin, of the thigh, of the axilla, of the breast, of the thyroid; I have also employed it in cases of obstinate articular effusions, and principally in that of the knee—the most extensive articulation in the body. The same experiments were made at that time by M. Boinet and many other surgeons. The application of this mode of treatment to ovarian cysts is pointed out in my treatise on operations at the date of 1839; and, in fact, numerous cases of that affection have been already treated in this way. M. Robert appears to be the first to attempt it in France, and others have introduced it in England and Germany. M. Boinet has practiced a great number of iodine injections, at the same time that I have also tried it in a number of cases, although with less enthusiasm than our confrere, who has followed out this method so vigorously as almost to make it his own. MM. Jobert, Monod, Demarquay, Huguier, Fock, Briquet, and Nelaton, have all reported their quota of facts; the whole, along with my own cases, forming an assemblage of 130 examples. We must, no doubt, cut down this number. for some cases have been doubly mentioned in the statistics of M. Briquet, for instance, and M. Boinet. I cannot say exactly if, among the examples of MM. Monod and Demarquay, any of these are introduced into the statistics of each of these surgeons. M. Jobert speaks of twenty-six operations, and, in his address of Tuesday last, he only detailed ten cases. Could it be that these twenty-six operations were performed on only ten patients? In all, there have been thirty deaths, and sixty-four cures; in the other cases the disease recurred. In 130 patients, thirty deaths is a considerable proportion: should such really be the mortality of the operation, I would not be inclined to recommend the injection of iodine in ovarian cysts. On the other hand, the proportion of sixty-four recoveries is worthy of being taken into consideration.

But to what cause are we to attribute the unhappy termination of some of these cases where iodine has been injected? Ovarian cysts differ considerably from each other; the diagnosis of these, according to certain of our learned colleagues, is an easy matter. Perhaps so; but, for my own part, I regret being less competent in this respect. In my opinion, nothing is more difficult. There are cysts of the Wolffian bodies; cysts upon which MM. Follin and Verneuil have published interesting memoirs; there are some of these singular cysts attached to the ligaments, like the nest of a loriot to the branches of a tree; some are connected with the uterus, and of these M. Huguier has given an excellent description; several enclose a thick epithelium which prevents the adhesion of their parietes by inflammatory action; and, among the cysts proper to the ovary, those arising from a Graafian vesicle contain a gelatinous or a sanguineous fluid, while the contents of the others are serous. The cysts of the peritoneum, like these last mentioned ovarian cysts, resemble hydrocele in their anatomical constitution, and require the same treatment. But it seems to me difficult to establish between these different kinds of cysts any positive diagnosis, and yet it would be of importance if we could ascertain the nature of the fluid contained within their sacs. I have already mentioned, that when the contents are serous, it indicates that the surface from which it is effused is serous also, and that it is in these cases that the chances are most favourable to the operation. It may be asked, whether it is then to be adopted exclusively in cysts of this nature; but, having seen it succeed in those where the contents were bloody, I believe it also suitable for cysts enclosing fatty or sanguineous matters.

Of thirty cases of death, however, to which I have just alluded, twenty of them do not belong to what is more correctly the iodine injection method, but to a mode of treatment under consideration at the present day, and which consists in leaving the canula of the trocar within the wound. The operation of puncture, followed by injection, has been erroneously confounded with that where a foreign body is left in a permanent opening into the tumour. But the circumstances of the two cases are entirely different. In the first, the curative process takes place under the skin. It is a subcutaneous method of cure, and is unattended by suppuration. In the second, suppuration is induced; and, supposing this to take place over the surface of a sac, capable of containing thirty litres, how is the patient to withstand such a secretion of pus? The iodine injections practised in such cases, moderate the amount, and restore the quality of the pus secreted, and thus do not occasion exhaustion by the drain produced. Moreover, the facts speak for themselves. On twenty occasions, and perhaps oftener, death has followed a permanent opening being made in these cysts, as the result of cases by MM. Robert, Briquet, and Fock, has proved; and now, if we deduct from the thirty cases of death, twenty, resulting from puncture where a canula or sound was left in the wound, there remains only ten deaths to sixty-four cures. There is here a very satisfactory proportion, and one which may in future become still more so, since as yet this method of treatment has been employed more as an experiment than otherwise.

The essential point to be established is, whether puncture, followed by iodine injections, is attended with greater danger than puncture alone, or are both methods equally safe? Should the latter conclusion be arrived at, then there is no difficulty in the choice. We have in the iodine injections a mode of treatment by which three patients in four are cured—that is to say, a most serviceable remedy. Science, as well as humanity, are equally interested in the early decision of this question.

In conclusion, it appears to me from what I have seen and from what has been observed by others,—

1st. That ovarian cysts have a duration of six, ten, or twelve years.

2nd. That they are susceptible of cure, either spontaneously or under the influence of pharmaceutic treatment.

3rd. That cure may follow their rupture, although such an event is more generally attended with unhappy consequences.

4th. That palliative puncture of ovarian cysts is not a dangerous operation; that it may lead to a complete cure in certain cases, these being indeed very rare; that it involves the disadvantage of inducing, or hastening the exhaustion of the system, by occasioning the loss of enormous quantities of fluid.

5th. That extirpation is an operation so terrible in its nature that it should be proscribed, even allowing the alleged successful cases of its performance really to exist.

6th. That the only injections, of an irritating nature, to be employed, are those of iodine; and that these are applicable in all the serous cysts of the abdomen, connected with the ovary, or foreign to that organ: (with regard to cysts of a multiple or areolar description, or complicated with various kinds of degeneration, they are not to be touched).

7th. That iodine injections may also be employed in cysts containing fatty unsanguineous matters, after premising repeated punctures, with the view of transforming such cysts into collections of serous fluid.—*L'union Medicale.*—*Edinburgh Medical Journal, March* 1857, *p.* 828.

151.—THREE CASES OF OVARIAN DROPSY INJECTED WITH TINCTURE OF IODINE.

Under the care of T. P. TEALE, Esq., F.L.S., &c., Leeds. (Reported by ROBERT GEORGE HARDWICK, Esq., House-Surgeon to the Leeds General Infirmary.)

[The first case reported by Mr. Hardwick is that of Mary Kenny, admitted August 1, 1856, under the care of Mr. Teale. She is a thin, healthy woman, aged 24, unmarried, but has had a child a year and a half ago. In July 1855, she first noticed the tumour, which continued increasing till April 17 of last year, when it was tapped, and 34 pints of thick, dark, albuminous fluid removed. The tumour however again filled, and another operation was rendered necessary.]

On August 14, at 2 p.m., she was tapped, 29 pints of fluid being removed, and Mr. Teale injected half a pint of the Edinburgh tincture of iodine. The fluid was glutinous, clear, and almost transparent; it contained a large amount of albumen. There was no pain during the operation, excepting a little smarting when the canula was withdrawn, probably owing to the tincture touching the wounded skin. She became unconscious about two hours after the operation, with dilated pupils, restlessness, and constant vomiting. Pulse feeble, 120.

15th. She did not recover her consciousness till 7 this morning. She has vomited frequently, the matter having a yellowish-green colour, and smelling distinctly of iodine. The abdomen is soft, and perfectly free from pain. Pulse 118. Skin hot and dry. She has not made water since the operation, so the catheter was introduced to-day. The urine and vomited matter were found to contain large quantities of iodine. She was ordered 1 drop of prussic acid in a dessert spoonful of water every half-hour, till the vomiting was checked, and an infection of beef-tea, op. tr. opii ♏xv., brandy ℥j., every four hours.

16th. The vomiting continues, but it is not so distressingly frequent. Abdomen soft, and free from pain, even under pressure. Skin hot. Pulse 110. Tongue coated with a thick yellow fur. Thirst very urgent. Urine and vomit still contain iodine. Ordered a blister to the stomach.

18th. She still vomits, but less frequently, the matter having the same green tinge, and containing iodine in abundance. Pulse 108. Tongue as before. Much thirst. Urine still shows the presence of iodine.

20th. The bowels were opened yesterday, for the first time since the operation, and again to-day. Pulse 100. Tongue beginning to clean down the middle. Slight vomiting. A small patch of erysipelas has commenced on her forehead. The secretions were carefully analysed for iodine both yesterday and to-day. The vomit, urine, and saliva responded readily to the test, but none could be detected in the stools, breath, or perspiration. Ordered to have the injections every six hours.

24th. The sickness has quite abated, and her tongue is perfectly clean. Iodine has been detected daily in the saliva, but this morning none can be found. The urine still contains a small quantity. The erysipelas, which never reached a great extent, is rapidly fading. Ordered to have the injection twice a-day, and to take a little mild food by the mouth.

26th. No iodine can be detected in the urine to-day. She is free from symptoms except weakness.

This patient continued in the hospital several weeks, on account of her strength being rather reduced. During this time her abdomen increased two inches in circumference; but there was never at any time either pain or tenderness. I had the opportunity of examining her to-day, now nearly four months since her operation. The circumference of the body at the umbilicus was an inch less than when she left the hospital. The sac, still containing a very small amount of fluid, occupied the front of the abdomen, filling, but not distending it. She has quite regained her strength, and for some time has followed her usual occupation.

[The second case is that of Eliza Chew, a single woman, who has suffered from ovarian dropsy for six years, and has, during the last four years, been tapped 10 times. On Nov. 8 of last year, soon after her admission under the care of Mr. Hey, 29 pints of thick albuminous fluid were removed, and half a pint of the compound tincture of iodine (P. L.) injected. No pain was caused by this. The effects of iodine were observed ten minutes after the operation, by the dry, burning sensation caused by this drug. There were symptoms of listlessness produced, and a numbness in the face, and slight dimness of vision. Next day there was tenderness on deep pressure all over the abdomen. She did not progress favourably; the abdomen became very distended and tympanitic. She sunk gradually, and died on the 30th of the same month. Mr. Hardwick remarks, that Mr. Hey not considering the case a very promising one, only performed the operation at the urgent request of the patient, after she had heard the danger fairly explained.

The last case occurred in Mr. Teale's private practice.]

Mrs. S., aged 56, the mother of 11 children, became the subject of ovarian dropsy just after the cessation of the catamenia, 5 years ago. She has only been tapped once, now 12 months since, and no secondary cyst could be felt after the fluid was evacuated. In July 1856, the sac was again tapped, 32 pints of fluid being removed, after which half a pint of the Edinburgh tincture of iodine was injected. There was no pain at the time of the operation, except the smarting on withdrawing the catheter. Forty drops of laudanum were given after the operation, and in about an hour she became unconscious, and remained so 14 hours. She never suffered at all from pain or tenderness in the abdomen, and in a week was so far recovered as to go about the house dressed. I saw this patient yesterday, now nearly five months since the injection. Her health was perfect, and the tumour measured exactly the same as after the tapping.—*Med. Times and Gazette, Jan.* 31, 1857, *p.* 110.

152.—*Tapping an Ovarian Cyst and Injecting with Iodine; Fatal Result.*—The following outline of the case will prove of interest at the present moment; it has been kindly furnished us by Mr. George W. Lawrence, house-physician to King's College Hospital:—

Maria F——, aged thirty-two years, mother of several children, the subject of ovarian dropsy for the last eighteen months, twice tapped during the last three months. A large unilocular cyst, with a hard tumour at its base, somewhat larger than a fœtal head. Tapped by Mr. Fergusson on the 31st of January, 1857; and four ounces of the compound tincture of iodine injected into the cyst, with four ounces of water, nineteen pints of fluid having been first drawn off. She died the sixth day after the operation, apparently from exhaustion, having been in the intermediate time almost constantly delirious; and having, during the first four days, excessive vomiting. The vomit contained iodine in large quantity in a state of combination; iodine was also found in the urine, tears, and sweat. At the post-mortem, the cyst was found to be a large unilocular one, occupying almost the whole of the abdomen, and the tumour at its base to consist in part of a large number of small cysts, filled with the same albuminous liquid as the larger cavity, and the back part of a malignant growth. There was a great abundance of lymph thrown out in the larger cavity, but no adhesion, probably because fluid had been thrown out again so rapidly as to separate the surfaces. There was no trace of peritonitis; nor could any iodine be found in any of the fluids of the body by careful analysis.—*Lancet, March* 7, 1857, *p.* 242.

153.—*Ovarian Injection.*—One of the most suitable and proper cases submitted to this plan ot treatment we saw at St. Mary's Hospital on the 11th instant. The patient, a single woman, aged forty, had had an ovarian tumour more than twenty years, which was tapped for the first and only time about twelve years ago, when thirteen pints of fluid were evacuated. The swelling has been slowly and gradually increasing since that time, and as it was now proving inconvenient from its weight and size, it was tapped on this occasion by Mr. Baker Brown, when the patient lay on her left side in bed, through one of the linea semilunares, and about eighteen pints of a dirty, slightly greenish, yellow fluid were withdrawn, which contained only a small quantity of albumen. She was then turned over upon her back, and six ounces of strong tincture of iodine—three times stronger than the ordinary tincture of the London Pharmacopœia, and undiluted with water—were injected into the cyst, through a gum-elastic catheter passed through the trocar. This was allowed to remain, as is the custom of Mr. Brown in such cases, and was not followed by the slightest pain. In fact, as the patient seemed otherwise a tranquil, quiet, healthy woman, the result is likely to be a successful one. When reaction sets in from the effects of the iodine, Mr. Brown gives wine, as very great prostration is often the result of it. Generally, in about half an hour after the injection has been completed, all the secretions of the body become most remarkably impregnated with iodine, the saliva tasting quite strong of it.

At page 242, of 'The Lancet' for March 7th, in referring to two cases of ovarian tumour submitted to the same plan of treatment, we mentioned that tapping, in the recumbent posture. was practised *only* at King's College Hospital. We have since learnt that Mr. Baker Brown has been in the habit of performing paracentesis in that position for many years at St. Mary's Hospital; and he mentions in his work on "Diseases of Women" (p. 207, 8), that he has been in the habit of practising it in this position for the last ten years. Dr. Tanner also has done it at the Hospital for Women, in Soho-square, since 1852; and Dr. Simpson, of Edinburgh, is in the habit of performing it in the same position. As our readers are aware, at most of the London Hospitals, tapping is performed in the semi-erect position, and we have many times seen it followed by syncope, and often with great danger to the patient. The advantages of the recumbent posture are so obvious, that a little reflection, we feel satisfied, will suffice, on the part of our hospital surgeons, to make its adoption hereafter the rule. In the fluid withdrawn from Mr. Brown's patient, there was but very little albumen. This is a point of favourable importance in relation to the result of the case; for when albumen is present in large quantity, Mr. Brown has shown, we think pretty satisfactorily. that the cases do not do so well, and oftentimes the prognosis is very serious. We again saw this patient on the 16th instant, and found her doing very well. It appears that in five minutes after the injection of the cyst, iodine was detected in the saliva; subsequently in the vomit, urine, and tears. She was very much depressed for twenty-four hours, but was freely supplied with wine and brandy—a point of great importance, Mr. Brown insists upon, in these cases. She has not had any pain in the cyst, and there is no doubt whatever of her recovery and perfect cure.—*Lancet, March* 21, 1857, *p.* 290.

154.—ON "PHANTOM TUMOURS" OF THE ABDOMEN.

By Dr. Headlam Greenhow, Lecturer on Public Health at St. Thomas's Hospital.

[Dr. Greenhow observes, that for the elucidation of the true nature of tumours, which are often embarrassing to the practitioner and alarming to the patient, we are indebted to Dr. Addison. During an experience of many years, the author has observed about seven or eight cases of this kind. The first case which occurred, about fifteen or sixteen years ago, was that of a married lady in delicate health, who suffered much anxiety from the presence of a tumour in the right lumbar region, apparently about the size of a cricket-ball, but less regularly round.]

It appeared to be movable, and, if attached posteriorly, to be so only by a narrow pedicle. The impression that it conveyed on a manual examination was that of a loose body floating upon or amongst the viscera. In character, the tumour was firm and unyielding, free from tenderness, and somewhat changeable in site; for although invariably to be found on examination, its precise relative position varied a little from day to day. I have neglected to note how long the tumour had existed, but several opinions had been taken before I was consulted, and the lady had gone safely and without inconvenience through a pregnancy since its discovery. She had been recommended to place herself in the hands of an eminent surgeon, with a view to the extirpation of the tumour—a procedure to which I most strenuously objected. I have not seen the lady since, but I know that she has subsequently borne several children, and I learnt several years ago that she was in better health, and had undergone no operation; she is, I believe, alive at the present time. The treatment I adopted—chalybeates, and other means likely to improve the general health—was just what I now believe to have been best suited to the case.

[The next case was very similar to the preceding one. It occurred in a married lady about thirty years of age, who had recovered imperfectly from her last confinement. She suffered from profuse leucorrhœa, and was in a very weak state of health.]

The tumour, which in this case was likewise on the right side, appeared a good deal larger than that already described. Although at first disposed to view it as an ovarian tumour. I abandoned this idea upon a more careful examination, being partly influenced by the circumstance that, although a tumour, apparently as large as a full-sized fœtal head, very plainly existed in the right iliac region, the abdomen, on careful measurement, was found not to be really larger on that side. Another very remarkable feature in the history of the case, of which I was assured by the patient herself, but the correctness of which I confess to have doubted,—was that the tumour had entirely disappeared previous to and during the period of her last pregnancy, notwithstanding she had been under treatment for it at an anterior time. Although in a somewhat different situation, I at once referred this case to the same class as the last, and expressed a hope, based upon that experience, that, however troublesome, the tumour would not prove of any serious consequence. This lady is alive, and in the enjoyment of tolerable health. She has borne several children since the time of my attendance, but of the tumour I know nothing beyond the fact that it has, as I predicated, led to no unpleasant result.

The third case is that of an unmarried lady, aged between twenty-five and thirty, who was believed to be in a state of hopeless ill-health when she came under my care. The tumour closely resembled both those already described; was more fixed in situation, being in the right hypochondrium; was less movable under examination, and seemed about the size of a large orange. The more prominent symptoms of illness were evidently referable to spinal affection, and under treatment directed to it my patient slowly and gradually recovered. Although I did not at that time understand the connexion between these tumours and spinal disorder, yet, relying upon the harmlessness of the tumour in my two previous cases, I treated it as of secondary importance.

The case to which I am now about to refer is, perhaps, the most interesting of the series, for it clearly shows the really unimportant nature of these tumours, and yet how very easily they may be mistaken for examples of serious disease. Mrs. ——, aged forty-four, having borne a family, had suffered for several years from menorrhagia, alternating with profuse leucorrhœa. She had also suffered from a variety of other ailments referable to spinal irritation, itself due, I do not doubt, to the disarrangement of the uterine system. I was consulted by her, somewhat more than three years ago, for a tumour in the left hypochondrium, the appearance of which had been long preceded by occasional attacks of pain in that situation, of such intensity as to make her writhe about in bed, and for the relief of which opiates, even in large doses, were of little avail. This pain was of paroxysmal character, often coming on very suddenly, and sometimes without apparent cause, although more frequently as a consequence of over-exertion. It sometimes lasted for many days without intermission, but with variable intensity. The employment of counter-irritation to the spine, and of tonic treatment calculated to improve the general health and lessen the uterine flux, were of essential service; and when, at a subsequent period, I sought for the tumour it was not discoverable. After an interval of many months I was again consulted for the tumour, which, sure enough, had very evidently returned, and is described in my notes of the case as "an ovoid movable tumour, free from tenderness, and apparently floating loose in the left hypochondriac region; it is difficult to estimate its size, but it appears to be somewhat reniform, and at least twice the natural size of a kidney." It is further added that the patient was in all other respects in good health; that no fulness, tenderness, or pain existed in the posterior lumbar region, and that the urine was normal. Notwithstanding that I believed the tumour to be of the same character with those already related. I thought it desirable that the patient should have the benefit of a second opinion, particularly as I had been unable to find it on a previous occasion. An eminent physician who was called to my assistance, devoted much pains to its elucidation, but without arriving at any more satisfactory conclusion as to its nature than myself. We agreed that it could not be ovarian, from its position; that it was too movable for an enlarged kidney, which was also discountenanced by the absence of any unusual fulness, resistance, or tenderness posteriorly; and that it had not the character, neither had the patient the aspect, of malignant disease. Although in great doubt on the subject, we treated it on the supposition that it might eventually prove a hydatid growth. Sometime afterwards other symptoms of spinal irritation manifested themselves; and although I had never seen an avowed case of Dr. Addison's "phantom tumours," I began to suspect that this would prove an example of them, as it subsequently did. The patient, very shortly after the consultation, went from under my immediate observation, although she continued to act under my instructions. In the course of a few weeks she wrote me word that the tumour had dispersed; and a few months ago, being again in town, she afforded me several opportunities of satisfying myself that the tumour really was gone.

A few weeks since, I was called in to another case of the same description, which has entirely removed any lingering doubt in my mind as to the nature of these tumours. The patient, aged thirty-nine, and married for many years without ever being pregnant, has suffered for sixteen or seventeen years from dysmenorrhœa and from several of the various anomalous affections so frequently found in association with derangement of the uterine functions. She is very prone to attacks of what she calls spasms of the heart; but the ailment which causes most anxiety is a tumour in the left side of the abdomen, just below the margin of the ribs. The tumour is analogous to those already described; is movable, firm, and free from tenderness; but on a careful and somewhat prolonged manipulation, partly frictional, partly kneading, it seems to melt away under the fingers. On examination, very considerable tenderness was found to exist for the space of an inch and a half near the centre of the dorsal vertebræ, pressure by the sides of which produced pain in the chest, and also pain extending round to the left side. Entertaining not the slightest doubt that the tumour here is really a phantom, I have turned my patient's thoughts from its consideration, assuring her that it is unimportant, and am directing my treatment to the alleviation of the spinal irritation and to the improvement of the general health.

In considering the history of the cases I have described, it is noticeable that all of them were females suffering from some disturbance of the uterine function; and that while spinal irritation unequivocally existed in three of the patients, its presence may not unfairly be inferred in both the others. Although I have not myself seen any examples of these "phantom tumours" in the male subject, I can easily believe that they may occasionally occur under the influence of slight forms of spinal disease. I half suspect that a medical friend of mine, since dead, who had a tumour in the right hypochondrium, which disappeared for many months, during which he was in the enjoyment of good health, and reappeared at a subsequent time *pari passu* with a return of former bad health, was really the subject of one of these "phantom tumours." That such occurrences are much rarer in men, is readily explicable when we recollect the rarity in them of spinal irritation, of the multifarious symptoms of which these tumours are amongst the most important, since, if not understood, their presence may, as in several of the cases I have related, readily lead to the belief that the patient labours under some very serious disease—ovarian, malignant, or cystoid. The real nature of these tumours is spasmodic; their seat probably the abdominal muscles; for although, in every instance I have seen, the tumour appeared to be in the abdominal cavity, the melting away of my last case under manipulation is inconsistent with the belief that they are very deeply seated. Their cause is spinal irritation, the irritated spinal nerves producing spasm in the muscles to which they are distributed. I need scarcely observe how entirely this explanation of their character is in keeping with the history of the tumours in the foregoing cases. If it be admitted that they are formed by the spasmodic contraction of portions of the abdominal muscles, it is no longer matter of surprise that patients suffering from their presence should pass safely through pregnancies; that the tumours should cause no actual enlargement of the abdomen; that they should sometimes disappear spontaneously; that having thus disappeared they should sometimes return; that they should be removed under the use of remedies calculated to improve the general health, and to remedy the cause of the local irritation to which they appear referable; that they should change their relative position from day to day; or, lastly, that they should be temporarily dispersed under the manipulating hand of the physician. In confirmation of the apparent reality of their presence, and of my assertion as to the embarrassment and anxiety they cause to the practitioner who is ignorant of their true nature, I may point to the fact that the abdomen has been laid open by the surgeon at least five times for the removal of abdominal tumours which were found not to exist. Most probably all of these were really examples of these "phantom tumours," and yet the reality of their existence must, in each of these cases, have been impressed upon the minds of the patients and their relatives, as well as upon that of the operator and his colleagues, before he would have proposed, or they acceded to, so very serious an operation.

[Mr. Adkins communicates the following case as illustrative of Dr. Headlam Greenhow's designation of "phantom" tumours of the abdomen.]

About nine months since, I was consulted by an unmarried lady, aged thirty-two. Both herself and friends appeared very much alarmed at the almost sudden enlargement of one side of the abdomen, which she felt but little of unless when taking active exercise, when the breathing was impeded and considerable pain experienced in the region of the swelling. Her female relatives had examined her, and were certain that something was growing in her abdomen. On making an examination I found a tumour the size of my fist in the left iliac region, not easily defined, and movable. I had the greatest difficulty in overcoming their fears as to its being very serious. The subject was a tall, anæmic-looking person; she had not much otherwise than the tumour to complain of. The bowels were generally constipated; the urine is at present scanty, and she has suffered from menorrhagia for five years. I at first gave her purgatives, and afterwards the tincture of muriate of iron, combined with acetate of potash, for two months, when the tumour entirely disappeared. She has felt nothing of it since, and the general health is very much improved.

The tumour remained in the same situation and of the same size, for one month, when the patient returned to her home, continuing the medicine. A few weeks afterwards, she informed me by letter that the tumour had entirely disappeared, and that her uterine symptoms were much relieved.—*Lancet, Jan.* 17 *and* 24, 1857, *pp.* 58, 103.

155.—ON A SUCCESSFUL CASE OF CÆSARIAN SECTION.

By Dr. W. H. Thornton, Dewsbury.

[Dr. Thornton having been sent for on August 31st, 1856, an examination per vaginam was made, and what was supposed to be the head was found to be presenting. She recovered from the symptoms under which she then suffered, and about a month afterwards, in conjunction with Dr. Fearnley, who had been requested to see her, it was discovered that what had been mistaken for the head of the child was in reality the promontory of the sacrum enlarged by disease. The case was seen by other practitioners; she had had pains for many hours, and as it was impossible to perform craniotomy, the upper conjugate diameter being only one and a half inches, it was considered that the Cæsarian section was the only resource.]

The pains continued increasing in violence, without the slightest advance in the presenting part, up to four A.M., Oct. 1st, when I proceeded to operate in the following manner, being assisted by Mr. Alfred Rhodes, Mr. G. S. Rhodes, and Mr. R. N. Halliwell:—The patient, having emptied the bladder, was put fully under the influence of chloroform by Dr. Fearnley. I then made an incision, about six inches in length, from just below the navel to within an inch and a half of the pubis, immediately over the linea alba. One small artery was divided, requiring a ligature. The peritoneum, being exposed, was divided with a bistoury on a director, to nearly the same extent. There was some protrusion of the bowels on each side which were pressed back by sponges dipped in oil. I then made an incision about four inches in length in the uterus, and immediately proceeded to extract the child, without any difficulty, the back being towards the mother's abdomen, and the *breech* presenting to the pelvis. As soon as the child was removed, there was a smart gush of uterine hemorrhage, and I at once introduced the hand, and removed the placenta, which was partly detached. The child, which had not been felt to move for some hours, was dead. The uterus contracted directly, the bowels were pressed gently in, and the abdominal walls approximated. Four sutures were used to retain the parts in apposition, and the intermediate portions drawn together as evenly as possible by strips of adhesive plaster. A pad of lint over the wound, with a broad bandage, completed the dressing. No pain was evinced during the operation, except from the introduction of the sutures when the influence of the chloroform was beginning to pass off. The pulse was 100, and for a short time the patient seemed tolerably easy, but as the effects of the chloroform began to pass off, she became very restless and complained of great pain; but on watching her, it was evident that the pain depended on uterine contraction, as it had distinct intermissions. The pulse flagged several times, but rallied under the administration of brandy-and-water. She gradually became more sensible, complained much of the pain, and threw her arms about, evincing considerable impatience. Vomiting now came on, and recurred several times, but this was doubtless the result of the chloroform. She turned on to her side without assistance. I gave her forty minims of tincture of opium, part of which was rejected, and after a short time I gave her twenty minims more. This, being retained, had before long an evident effect in diminishing the pain, she gradually became more tranquil, and I left her at eight A.M.—Ten A.M.: Still moaning a good deal, but there had been no more vomiting, and she had kept tolerably quiet. Pulse 100, of moderate strength; countenance anxious.—One P.M.: Less moaning; seems more easy, and is getting more sensible; could scarcely comprehend that she was delivered. To have some sago gruel.—Eight P.M.: Pain less; has passed urine twice; no more vomiting; pulse 100, regular; some small clots discharged per vaginam; tongue furred in the centre, clean at the edges; quite sensible; countenance better; still a considerable amount of restlessness, and a troublesome cough. To have half a grain of acetate of morphia at bed time.

[On October 13th she could bear to sit up and the wound was rapidly healing; eight weeks after the operation the wound was perfectly healed.]

The success of the operation depended no doubt upon its having been undertaken before any symptoms of exhaustion appeared, and also there having been no attempt made to deliver by craniotomy, thus avoiding any injury to the parts; and considering that, after all, it was a breech presentation, I think it was fortunate it was not attempted. The great thing to fear, in my opinion, with regard to the patient in this operation, where performed early, is the supervention of peritonitis, and the plan of anticipating it, by giving small doses of calomel and opium soon after, and thus preventing it, seems to me to afford a better chance than any treatment that can be adopted after severe peritonitis has set in.—*Lancet, March* 28, 1857, *p.* 313.

156.—ON STERILITY DEPENDENT ON DYSMENORRHŒA AND DISEASES OF THE RECTUM.

By I. Baker Brown, Esq., Surgeon-Accoucheur to St. Mary's.

[Dysmenorrhœa as a cause of sterility may either be mechanical or spasmodic. This may be overcome by catheterism, caustics, cutting, sponge-tents, &c. The following cases will be sufficient to show that the use of bougies may be successful. Mrs. F., married, aged 27, has always suffered from dysmenorrhœa; the cervix uteri was so contracted that the uterine sound could not be passed; the smallest sized male-elastic bougie was passed, the size was gradually increased, and in three months Simpson's large uterine dilator could be passed. The cure was complete, the woman became pregnant and did well. In another case, a married woman, aged 31, suffered very considerably at each menstrual period. On examination, the uterine sound could not be passed. Treatment was commenced by passing a very fine bougie, and by gradually increasing the size, and allowing the bougie to remain as long as it could be borne each time. The stricture was cured—the woman soon became pregnant, and was safely delivered]

It was this case especially that induced me more particularly to devise some instrument more effectual for the object in view; and seeing the excellent system of Mr. T. Wakley for dilating urethral strictures, the idea occurred to me of a similar application to contracted states of the neck of the womb.

Let me now call attention to the set of instruments which I have contrived to dilate the os and cervix uteri, where this operation is called for. It will be seen I have made use of the admirable suggestions of Mr. Thomas Wakley, who has devised and carried out a tubular system as applied to stricture of the urethra with remarkable success. I have a sort of long stiletto, which I introduce into the os uteri through the speculum, as in the ordinary mode of passing Simpson's uterine sound, and then over this I pass the smallest sized elastic tube, and allow it to remain for a longer or shorter period, according to the pain produced. It will be found that cases which present almost insuperable difficulties to their dilatation readily yield under this simple contrivance, and without producing any bleeding or laceration, the not unfrequent result of ordinary dilatation. The most advantageous period for the introduction of the instrument is immediately after the secession of the catamenia, before contraction of the canal has taken place, and it has returned to its usual size.

I would wish to observe here, that I have never seen the necessity for the introduction of caustics into the cervix for the purpose of dilatation; and I think that no one who has studied the delicate structure of the lining membrane of the uterine cervical canal, and who recollects the necessity for its expansion and contraction at each menstrual epoch, would ever be induced to destroy any portion of it by such means. I may also incidentally observe, that I have had many cases come under my notice where partial occlusion of the os and cervix has been the result of their use; and I feel quite certain that the use of such agents is a more frequent cause of sterility than is generally supposed.

I shall now proceed to speak more fully of a series of causes of sterility, which, as before said, have not been previously recognized, viz., diseases of the rectum. Let me first recall to your minds the general law of the animal economy, "That any irregularity or interference with the functional action of any one part of the body affects more or less the whole body." If this law pertain to the body generally, how much more must it obtain between the female organs of generation, where the slightest deviation from normal functional action must materially interfere with the delicate physiological process of impregnation, and the contiguous organs. We must bear in mind that both the rectum and uterus are supplied with blood from the internal iliac artery, and with nervous influence from the sacral plexus, and that, therefore, disease or functional derangement in the one part or organ must interfere with the other. This I desire to illustrate in the following manner:—A female is suffering from bleeding hemorrhoids. At the menstrual epoch there is an increased supply to the hemorrhoidal vessels; and, consequently, a diminished supply to the uterus, because nature only sends down a sufficient supply for the uterine function. The mucous membrane of the uterus will not, therefore, in this case undergo those normal changes which are necessary for the reception of the impregnated ovum. The same observations apply to prolapsus ani, where there is always some loss of blood at every time of defecation, and a greater loss at the period of the menstrual epoch. I could illustrate this with many cases, but one will suffice:—

Sterility from Prolapsus Ani.—Mrs. H., aged 33, married ten years, without family, consulted me on account of prolapsus of the bowel at every act of defecation, accompanied by loss of blood. The general health had greatly suffered. Upon questioning her, she confessed that during married life the catamenia had been scanty, thin, and light in colour; but that during the menstrual period much blood was lost from the bowel. The affection of the bowel, I pointed out, was readily curable; and, as there was no uterine disease to be detected, that the state of the bowel was the probable cause of her having had no family.

After preparatory regimen and medicine I proceeded to operate a week after the menstrual epoch. The bowels having been previously freely opened, I applied three separate ligatures to the prolapsed mucous membrane, and returned the tied parts within the sphincter. Opiates were freely given, and continued for a week so as to keep the bowels confined, and she was placed on generous diet, with wine. This patient progressed most favourably, the bowel was completely relieved, and at the next catamenial period, the uterine discharge was much augmented both in quantity and colour. Tonics and good diet were persevered with, and she lived apart from her husband for two months. Soon after this period she became pregnant, and advanced to the full period, and was delivered of a fine healthy child.

If a patient is suffering from fistula or fissure there is constantly more or less pain in the uterus as a result of reflex action; and, consequently, it is always under a state of irritation which renders it unfit for the quiet and perfect performance of its duties. Indeed, I have seen many cases, which I shall mention on a future occasion, of patients having been treated for months and years for uterine inflammation with leeches, caustics, &c., where I have discovered a long-standing fissure of the bowel, which has been the sole exciting cause of the uterine affection. I shall here give a case.

Fissure of the Rectum.—Mrs. M., aged 26, married three years, without children, consulted me and made the following statement. Ever since her marriage, she had suffered from more or less pain about the womb, not acute, but of a dull, wearing kind. Catamenia were regular both as to time and quantity, and she suffered very slightly from leucorrhœa; had no pain on sexual intercourse, but felt generally ill, and suffered from dyspepsia. An examination per vaginam satisfied me there was no disease of the uterine organs. On further inquiry, she told me she suffered constant pain at stool, and frequently passed a small quantity of blood; a local examination showed me a deep and long-standing fissure of the rectum, which, to my mind, explained all her symptoms, and was the probable cause of her sterility. After preparatory treatment, I accordingly operated in the usual way by dividing the fissure. The after treatment consisted in placing her under the operation of opium, giving her at once 2 grains, and every 4 hours after, 1 grain, for the first 24 hours, then for the next day 1 grain every 6 hours, and for the next week a grain night and morning; my object and principle being not only to secure perfect quiet for the bowel, but to obviate all pain. With this treatment was conjoined generous diet, and, according to rule, the recumbent posture was insisted on, until the parts were well healed; at the end of nine days the bowels were opened by repeated injections of tepid water. This plan of confining the bowels after operations about the rectum and perineum, the use of generous diet and wine, and the subsequent administration of enemata, has received a full consideration, both in some papers I have had the honour of reading before the Medical Society, and in my work on the treatment of some important surgical diseases of women.

From the foregoing observations it will readily be seen that ascarides in the rectum, or any irregularity or disease of that bowel, must necessarily be a frequent cause of sterility. It is very gratifying, however, to know that when once the mind has been drawn to this fact, the cases become more simple and among the most readily cured.—*Med. Times and Gazette, Feb.* 21, 1857, *p.* 186.

157.—CASE OF UTERINE POLYPUS CURED BY THE ECRASEUR.

By Dr. Peter Shannon, Surgeon to the Hospitals of the South Dublin Union Workhouse.

[A woman, aged 40, had been subject to the usual symptoms of uterine polypus for about three months, when one day whilst lifting a heavy weight, she felt something give way and fall into the vagina: from this time the symptoms were very much increased, there was a constant discharge of blood, which told very seriously upon her constitution. On examination, there was found to be a polypus in the vagina, perfectly insensible, about the size of a Seville orange, pendant from within the os uteri by a pedicle about as thick as one's middle finger.]

The loop of the chain was introduced into the vagina as the woman lay upon her left side; with two fingers of my right hand I then enlarged the loop to the utmost, and slipped one edge of it under the base of the polypus; by rotating the instrument upon its axis, so as to make it describe a half turn, the loop was then thrown fairly over the polypus from below; after which the chain was tightened so as to encircle the pedicle closely. Chloroform was next administered; after some little delay it acted kindly; perfect anæsthesia ensued; the screw was now turned slowly and steadily, and with very little force I succeeded in cutting through the stem, without a single drop of hemorrhage.

The screw of the ecraseur is so powerful that a very slight amount of force was sufficient to effect our purpose. Indeed so little force was required, and so perfectly bloodless was the operation, that for a moment we were doubtful that we had succeeded. The chain was therefore once more introduced into the vagina, and again thrown over the polypus; this time, however, it came away without the slightest check, proving that the polypus had been already fairly severed from its connexions with the womb.

A strong double hook forceps was now introduced closed into the vagina; by the finger its points were conducted fairly to the tumour, which it readily seized, and in this way a small amount of force sufficed for the extraction of the polypus, its size alone having caused considerable delay at the os externum.

Nothing could be more successful than the result of this case. Three weeks have now elapsed since the date of this operation, and without the occurrence of a single unpleasant symptom. All sanguineous discharge ceased with the removal of the polypus, although for nearly four years previously there had been daily losses. The finger in the vagina can now detect no remains of the pedicle, and the woman's appetite, and strength, and looks, and spirits, have all undergone such marked amendment, that she may fairly be considered a perfect cure.

Most of the methods hitherto in use for the cure of uterine polypi are more or less objectionable. The operation by simple excision is sometimes followed by dangerous hemorrhage, and as the bleeding point lies deep within the vagina, there may be considerable difficulty in controlling it. The operation by ligature involves a delay of several days, during which the ligature may require to be tightened again and again, the patient all the time suffering the greatest discomfort, and what is worse, the fœtid suppurations sometimes producing fatal results by purulent infection.

The ecraseur has at least the merit of finishing the operation at a single sitting, and on further trials it will probably be found to have the additional advantage of preventing hemorrhage, as well as fœtid suppurations and purulent infection.—*Dublin Hospital Gazette, Dec.* 22, 1856, *p.* 369.

158.—*Hemorrhage as a Sign of Cancer of the Uterus.*—Dr. West remarked, in his out-patients' room, at St. Bartholomew's, on the almost constant occurrence of hemorrhage as a symptom of commencing cancer of the os uteri. He believed, he said, that it was quite as constant and valuable a sign, in relation to that disease, as hæmoptysis is in respect to tubercle in the lungs. Of course, inasmuch as the uterus is in health subject to sanguineous discharges, there is need of care in determining that the sign be really one of disease; that, for instance, it occurs with an irregularity, and a profuseness greater than disturbed catamenial function could account for. The symptom has its peculiar value when the subject of the affection had previously ceased to menstruate. Dr. West stated, that he had long recognised the importance of the symptom, but that on recently counting up his cases of uterine cancer he had been astonished to find how almost invariably it had been the earliest sign of the existence of the disease.—*Med. Times and Gazette, Feb.* 21, 1857, p. 191.

159.—CASE OF CANCER OF THE MAMMA REMOVED BY A PAINLESS METHOD.

By RICHARD BARWELL, Esq., Assistant-Surgeon to the Charing-Cross Hospital.

[Besides the mineral escharotics which are used in cancerous diseases, there are several belonging to the vegetable kingdom which have the advantage of painlessness; moreover, they hardly act on any but fungoid or lowly organized growths; such are, oak-bark, the sanguinaria canadiensis, &c. &c. In the case below reported tannic acid was used as the least irritating even of vegetable escharotics. In the preliminary remarks to this case Mr. Barwell says that]

The mere removal of a carcinomatous growth is very far from being a cure of the disease, and therefore with the local treatment was combined a remedy in which I have learned to place great reliance. I have found that chlorine, given either simply or in combination with soda, acts as a most powerful absorbent and tonic. The weakest and most worn-out system can bear it; it relieves the gastric irritation and rheumatoid pains, so frequently the signs of commencing cancerous cachexia. Even in far advanced cases of uterine disease I have proved the value of this medicine, finding it followed by the above effects, and by a restoration of almost the healthy skin-colour. I hope soon to furnish some examples, wherein the action of this remedy will be fully shown. In the following case it was given in combination with soda (its weakest form), was commenced in a very small dose, increased by five drops every third day.

M. H——, aged sixty-two, came to Mr. Canton at the Charing-cross Hospital, with a tumour in the right breast, on the 5th January, 1857. She has borne and suckled seven children, and suffered eight miscarriages; ceased menstruating at fifty. For some years past has been troubled with business difficulties; but about Christmas, 1854, more important family troubles deprived her of sleep and appetite; she lost flesh, and has since remained thin. In February, 1856,—that is, fourteen months after the commencement of these more serious anxieties,—she found by accident a hard lump, about the size of a marble, in the right breast. Up to last November this tumour remained passive, but at that time began to increase rapidly, and to give rise to sharp, darting pains. Mr. Canton seeing her on the 5th, pronounced the tumour scirrhus, and, knowing me interested in such, was kind enough to order her to return in a week, that I might have an opportunity of seeing the case. On the 12th January I saw her with Mr. Canton. She is rather tall and spare, with a worn look, slightly yellow tinge of complexion. The tumour, as large as a full-grown English walnut, was at the inner side of the breast, and a little below the level of the nipple. It was of stony hardness, without claw-like prolongations, smooth on the surface, and movable amongst the tissues. The skin was adherent over a space rather larger than a sixpence, and in the centre of this space was a small dry scab, which, when removed, showed an ulcer, around which the skin was just beginning to wrinkle. Mr. Canton removed this tumour, together with a good deal of surrounding tissue. The wound bled considerably. Various styptics were used, and in about six hours the bleeding was arrested.

I took the tumour home with me for further examination. On cutting it in halves, it creaked under the knife, showed a pearly surface, with fibrous appearance. On pressure there oozed forth a white homogeneous juice, which emulsioned perfectly in water. A piece of tumour showed, under a magnifying power of three hundred diameters, fibrous matter in considerable quantities, and a large number of nucleated, binucleated, and nucleolated cells, with thin walls and irregular outline. Running round the tumour, in its substance, was a thin red vascular line, lost in the little ulcerated spot above-mentioned. This appeared to me the first step towards softening.

Jan. 19th. The wound has been going on well; but to-day it has assumed a somewhat suspicious appearance.

27th. Mr. Canton was good enough to offer the future management of the case to me. I noted the following general and local appearances:—The skin had assumed a duller and yellower hue; the conjunctiva was of an ashen-green colour; the patient had a worn look; was dark under the eyes; had little appetite. There was a hard tumour, which partly enclosed the outer angle of the wound, and extended two inches beyond it, the growth measuring laterally nearly three inches; from top to bottom an inch and a half; the end of the wound cuts an angular slice out of this tumour, the cavity being lined with ragged tissue, some of which I clipped off, and, under the microscope, found it consist of soft fibrinous matter, mixed with some such cells as above described, but chiefly with free and clustered nuclei with nucleoli. I applied, by means of a sable brush, a solution of tannic acid—one ounce of acid to half an ounce of water; and ordered her to take fifteen minims of the chlorinated soda solution, in water, three times a day.

On the following morning there was a thick white slough, which could be partially separated, so as again to allow of a free application of the acid. This escharotic was applied daily; it caused no pain; indeed, a throbbing, darting pain, which she had complained of at first, was soon greatly lessened; portions of slough separated occasionally from the mass, and were removed; and on the 10th of February, the whole dead tumour came away, leaving a pure granulating concave surface. Thus in fourteen days, the diseased mass had been removed by a painless process. There remained of course a cavity to be filled up; but this was not large, because this application draws the sound parts so close round the slough, that they push it out further and further, so that the hollow is not as big as the tumour, which was removed from it.

On the 28th of February the wound had healed, without any induration; and the patient left the hospital greatly improved in health, with a clear complexion, and without that peculiar dull ashen colour of the conjunctiva.—*Lancet, March* 14, 1857, *p.* 261.

160—*Sore Nipples.*—M. Legroux has found the following treatment very efficacious. Collodion is rendered elastic by the addition of half a part of castor oil and 1½ parts of turpentine to 30 of collodion. It is applied by means of a pencil over a radius of some centimetres around but not on the nipple. Over this is applied a piece of gold-beater's skin. having some pin-holes opposite the nipple to allow of the passage of the milk. This, by the drying of the collodion, becomes rapidly agglutinated. Before suckling, the gold-beater's skin is moistened with a little sugar and water, and becoming soft and supple, easily admits of sucking. If it is cracked it must be replaced.—*Union Medicale.*—*Med. Times and Gazette, Oct.* 25, 1857, *p.* 427.

161.—Dr. Simpson's *Morphia Suppositories.*—Mr. Spencer Wells has introduced into use at the Samaritan Hospital, a form of Morphia Suppository, used with great advantage by Dr. Simpson of Edinburgh. Mr. Wells has found it a most convenient form of suppository after operations on the vagina, rectum, uterus, or perineum of women, both in hospital and private practice, and especially so after operations on the male genito-urinary organs, as lithotrity, in cases of retention of urine, irritable stricture, &c., and after division of fistula in ano, or the removal of piles or prolapsed mucous membrane of the rectum by the ecraseur. They act much more efficiently than the soap and opium in common pill use as a suppository, and are seldom or never expelled from the rectum after their introduction above the sphincter. They are made extremely well by Messrs. Duncan and Flockhart, of Edinburgh, and supplied by them at a very reasonable rate, of various strengths. But as they are likely to come into more general use we append the formula on which they are prepared. The following is for the half grain suppository:—Take of acetate of morphia, 6 grains; sugar of milk, 1 drachm; simple cerate, half-a-drachm, or as much as may be sufficient to make a proper consistence, and divide the mass into twelve suppositories. Then dip each suppository into the following mixture, to form a coating:—Take of white wax 1 part, lard plaster 2 parts; melt together. The best way is to insert a needle into the apex of the suppository, dip it into the melted wax and lard, and immediately afterwards into cold water to harden it before it loses its shape. The shape is conical, like a pastile. It is easily introduced by the finger, or more neatly by the ordinary ivory suppository syringe. Mr. Coulson has also used these suppositories lately in several lithotrity cases, and has found them of the greatest benefit in allaying the irritation which often attends the passage of the fragments of calculi through the urethra.—*Med. Times and Gazette, Feb.* 7, 1857, *p.* 141.

162.—*On the Vapour of Amylene in Midwifery.*—[This substance is yet upon trial at the various London Hospitals, but a positive opinion cannot yet be pronounced upon its merits.]

There is one thing that should be remembered when giving it, and that is, to use an inhaler, and not a mere piece of lint. How well soever this may occasionally answer with chloroform, it does not do so well with amylene. It has already been used in midwifery practice by Dr. Tyler Smith with the most satisfactory results. He has observed to us, that he administered it on a folded towel, to the extent of about thirty, forty, or fifty drops at a time, on the coming on of each pain. It produced rapidly a state of insensibility to pain, the uterine contractions remaining undiminished in force and frequency. The recovery of sensibility after pain was over, and the towel removed, was always almost instantaneous. At the time of the birth of the child, the insensibility was as complete as though chloroform had been used. The placenta was detached, and came away readily, and the uterus afterwards contracted well. The pulse was found to be little, if at all affected, the child was vigorous and healthy, and did not seem at all influenced by the anæsthetic. Dr. Tyler Smith thinks the advantages, as compared with chloroform, in midwifery, would seem to be the suddenness of its influence and its asserted safety, and the rapid disappearance of the insensibility after the amylene is withdrawn. The only disadvantages he could perceive are the pungent smell and the large quantity consumed.—*Lancet, Jan.* 31, 1857, *p.* 115.

MISCELLANEOUS SUBJECTS.

163.–ON THE PROPAGATION AND TREATMENT OF TÆNIA.

By Dr. W. Hughes Willshire, Assistant Physician to the Charing Cross Hospital.

[The author has before shown that the *cystoid*, *cestoid*, and *nematoid* entozoa are not distinct and specific creatures, but are merely progressive stages of development. *Tænia solium* of man probably has its protoplast in the *cysticercus cellulosæ* of some of the lower animals, particularly of the pig.]

As a corollary of these and correlated doctrines (unnecessary here again to refer to), I would now offer some illustration in support of the opinion that *one chief* means by which the human body becomes subject to the parasitic presence of the common tapeworm is through the employment of raw, or underdone, or imperfectly cooked flesh as nutriment; and that though the flesh of the pig, in particular, thus employed, is perhaps more likely to produce the effect in question, yet, practically, raw or underdone beef and mutton operate more extensively, in consequence of their wider use. Such flesh, it is of course here assumed, contains the cystoid entozoon, the *cysticercus cellulosæ*, which undergoes its higher metamorphosis in the body of the person using such flesh as food. It is not meant to be maintained that such is the only way in which the propagation of tænia is carried on, or that where this has been even in operation it has not needed the combination of other factors in the causation as well. It is to my mind, however, one causative element of considerable influence and extent, and one concerning which I now proceed to offer a few illustrations, drawn from the experience and records of others, as well as from what has happened to myself. In the first place, however, I would recall to mind the following experiment of Küchenmeister as the clue to a right interpretation of the aim of the few illustrations I have been enabled to collect together. A criminal being condemned to death, Küchenmeister obtained permission to introduce ova into his food, at periods varying from 130 to 12 hours before execution. He managed to give this felon, at his meals, a number of *cysticerci* got from the intestines of pigs and rabbits. They were partly disguised by their resemblance to the grains of rice in warm rice soup, partly by their likeness to the small bits of paste in a kind of vermicelli gravy, and partly by their being substituted for the small lumps of fat in black-puddings. On examining the body of this criminal forty-eight hours after decapitation, ten young tapeworms were found attached to the small intestine by their hooks and suckers.

From the experience of others I glean the following illustrations: Theophrastus of Eresus has recorded the observation that scarcely any persons at Athens suffered from tapeworm, except the athletæ, and they were nourished in particular upon the flesh of the pig. Wawruch and, still later, Bamberger, have asserted, on the other hand, that the Iraslites are remarkably exempt from the parasite. In 206 cases of tænia, only three happened to Jews, and they confessed to Wawruch that they had not rigidly abstained from the use of pork. The same investigator came to the conclusion that those most liable to be infested were butchers, sausage-makers, and cooks, an opinion with which the experience of Mason Good, I believe, coincided. But at any rate Küchenmeister has very lately maintained the same fact, and has entered into certain explanations why not only butchers but *their families* are thus liable to be infected. The constantly handling raw meat, the practice of putting a knife between their lips and teeth, their taking their meals with unwashed hands, &c., are some of these reasons; such practices showing how easily fresh uncooked cysticerci may obtain entrance into the alimentary passage of man from the flesh of the inferior animals.

According to the published statements of the well-known travellers, Bruce, Rüppel, and Pruner, nowhere is the human body so frequently and extensively infested by the entozoon in question as in Abyssinia, where the use of raw meat, particularly amongst the poorer classes, is almost universal. People not infested are looked upon as exceptions almost to a rule, and strangers who comply with the usages of the country are sure to be sooner or later attacked. Godingus, who wrote a book in 1615, 'de Abyssinorum rebus,' alludes to a tree, (probably our present kosso), as being very efficacious against worms produced by the use of raw meat; whilst a recent writer makes mention of certain "Patres Carthusiani Abyssinorum," rigid and systematic fasters and abstainers, who escape the attacks of the parasite in question. A few years since, Beer, of Berlin, introduced the use of finely-chopped raw meat as a tonic diet in the cachexias of children. It gradually became rather extensively employed on the Continent, and I introduced it myself at the Royal Infirmary for Children. I was arrested, however, in continuing to recommend it, (substituting prepared bullocks' blood, as advised by V. Mauthner.) on account of Dr. Weisse, of St. Petersburgh, publishing, in the 'Journal für Kinderkrankheiten,' an account of three children of between one and two years of age becoming attacked by tapeworm, after having been fed upon raw meat for periods of time varying from two months to a year,—the *tænia solium* being rare at St. Petersburg, and in neither instance had any of the children's relatives suffered from the entozoon. In a paper by Dr. Anderson (of the 43rd regt. of Light Infantry), published in the 'Indian Annals of Medical Science' for October, 1852, ninety-five cases of tapeworm are alluded to, and in connexion with which the following observations occur:

"Eighty-six were European soldiers, eight were Mussulman natives, and one a Hindu of the metiter or lower class. . . The food of Europeans in India is of course much the same as in Britain, consisting, amongst other articles, of 1 ℔. of animal food (beef or mutton) per diem. The eight Mussulmans belong to the class of natives whose religion does not interfere with their diet, and whose habits, less frugal than those of the Hindu, do not prevent them from indulging freely in all varieties of animal food, except pork. The solitary Hindu patient is one of a class whose degraded position allows them to partake of any substance, animal or vegetable, not excepting animals that have died of disease. From these circumstances it seems that varieties in modes of life cause material differences in the liability to the tænia; that amongst those who indulge largely and daily in animal food tapeworm is common; that amongst those who, where their means admit of it, partake of flesh in small quantities, tapeworm occurs but in small proportion, and that as far as my experience yet goes, amongst several native regiments, Hindu sepoys and servants, whose food is only vegetable and farinaceous, the tapeworm is unknown."

Dr. Wood, of Philadelphia, has remarked upon the comparative rarity of tapeworm amongst the natives of the United States; whilst very lately I read that Dr. Fleming, of the Queen's University, Ireland, has been informed that in Cincinnati, the largest pork market in the States, the "measle" (or cysticercus) is unknown. Küchenmeister affirms Poland, Hungary, England, Pomerania, and Thuringia, to be the chief localities of tænia solium, as also that it is there where the use of pig's flesh is by far the most extensive. While the occurrence of tænia is said to be very common in Germany, where the practice of eating raw ham is very far from unusual, in Scotland, according to Dr. Gairdner, tapeworm is very rare compared with some European states, and rare as compared with some parts of England. This Dr. Gairdner attributes to the small proportion of animal food, and especially of ill-cooked animal food, used there by the labouring classes. Further, Dr. Crighton has drawn attention to the common practice amongst the Lancashire operatives of eating raw meat, and has recorded the following very pertinent illustration of its results:—

"In December, 1853, I was consulted by T. B——, aged forty, a calico-printer, on account of tapeworm, with which he had been troubled for six or seven years. On inquiring as to what means he had employed for his relief, I was much struck at the long list of medical practitioners under whose care he had been, but without obtaining respite for any length of time from his distressing complaint. He stated that the remedies employed had generally been successful in bringing away portions of the parasite, but that after a greater or less time, never exceeding a few weeks, his symptoms—itching, pain, &c.—had invariably returned. The observations of Dr. Nelson on the development of tænia solium immediately occurred to me, and led me to ask him whether he was in the habit of eating animal food uncooked? After some hesitation, he admitted that he had acquired the practice in his native county Lancashire, and that since his removal from it to Derbyshire, his complaint had increased much, owing, as he thought, to his not having fish so frequently as before......Although he used both beef and mutton, he preferred the latter, and used more of it in a raw state. When questioned as to the frequency of his taking it uncooked, he allowed that he did so at least once a week......I enjoined him, if he wished to get rid of his tedious ailment, to avoid raw flesh in future......On inquiry after him during the summer of 1854, I was glad to find him nearly free of his complaint, and during the present month (May, 1855,) he states that he has been completely well since the end of last summer not having seen any portions of the worm since the beginning of September, and that he has entirely abandoned the practice of eating uncooked animal food."

During the early part of last year, a girl entered the Royal Infirmary of Edinburgh, under the care of Dr. Gairdner, to be treated for tapeworm, nine yards of which were afterwards expelled under the influence of a particular remedy. On inquiry, the patient admitted that she had been in the habit of eating quantities of raw pork and butchers' meat generally. This was from a peculiar liking or inclination of her own, and was not a habit contracted in consequence of the example of others. In other respects her diet had been similar to that generally in use in her station of life in Scotland.

I shall now make reference to one or two cases coming within range of my own experience.

July, 1856.—C. F——, a young man, seventeen years of age, applied at the hospital to be relieved of tapeworm. He owns to eating raw meat, but says his friends try to prevent him eating it, so that sometimes he only got a piece the size of an inch or so about once a month, sometimes a little oftener. He had the "long round worm" (acaris lumbricoides) when younger, and in Devonshire, but did not then eat raw meat, His cooked meat, he states, is generally underdone. The remedy prescribed brought away several yards of tænia.

August, 1856.—M. C——, a female, aged twenty-six, applied as an out-patient at the hospital, to be treated for tapeworm. Has suffered from it for five years; almost every day bits come away. Once nearly twenty yards passed from her body. Sometimes the worm comes away as she sits, and will do so for half an hour together. Being ashamed of it, she has not liked to tell anyone what she suffers from. Is reduced, as she expresses it, "almost to a skeleton." Has dragging pains in the stomach, bad appetite, and is very pale. The bowels are at present relaxed, blood and "jelly-like stuff" passing from her. Catamenia irregular. Admits that she occasionally eats a bit of raw beef, raw steak meat, when she buys it; is rather fond of raw meat—indeed, likes to eat it; her cooked meat, too, is always underdone.

Does not like, nor does she have, much pork. The remedy prescribed caused a long tænia to be evacuated.

November, 1856.—C. F——, the male patient, (above alluded to,) and M. C——, the female one, have, with a strange coincidence, returned to the hospital during the same month, to be again relieved from tapeworm. The male patient confesses to having eaten raw meat again, and says he "could not help it." The woman does not admit she has recurred to the like and her former practice. The same treatment adopted as before, relieved both patients of their parasitic appendages.

December, 1856.—M. R——, a girl thirteen years of age, living in Lambeth, applied as an out-patient, to be relieved of tapeworm. Has suffered from it for four years, and it has come away one yard long together. Is troubled with sickness after meals. On being questioned, confesses that she eats a good deal of raw steak meat, being very fond of it. Her cooked meat is always underdone. She eats pork now and then, but not uncooked nor underdone. Her mother suffers from worms, but she does not know that her mother eats raw meat. The remedy prescribed brought away three yards of tænia.

January, 1857.—J. M'H——, a boy seven years of age, was brought by his mother to the hospital, to be relieved of tapeworm. He had a cough at the beginning of last summer, for which she gave him some "cough stuff," which brought away many joints of a tape-worm. Did nothing more, but finding some more joints on Sunday last, she thought she would bring him to the hospital. He is always picking his nose, sleeps restlessly, and has got very thin. He does not eat raw meat to her knowledge, but he has his meat always very underdone, as she thinks it is more nutritious with the gravy in it. Takes pork but very rarely, and he does not have much of vegetables. She had ascarides when young, but not tapeworm, nor have any of her family. The remedy prescribed brought away above two yards of tapeworm.

John G——, aged fifty-six, an attendant upon insane persons, was brought to me by one of the students of the Charing-cross Hospital, on the 19th of February last, to be treated for tape-worm. Stated that he first observed portions of a worm eight years ago, for a dose of medicine to remove the remainder of which he paid a sovereign to a "worm doctor," and which dose brought away the worm in large quantity. Two months after this, however, more portions of worm appeared, and he has been troubled with the disease ever since. He now complains of hunger, disturbed rest, the bowels being moved once a day. He confesses he is very fond of raw meat of any kind almost, except of pork and veal. Has always been fond of raw meat in preference to its being dressed, and has eaten as much as a quarter of a pound of raw beef-steak at a time. Has occasionally eaten raw ham, and this lately. His cooked meat is always underdone, but he does not consume much cooked pork. He would say that he had not observed any worm pass before the time he took to eating raw meat.

He has been in Scotland and Wales, and does not know that his father or mother suffered from tapeworm. He was ordered the usual treatment, but the result has not as yet been communicated to me.

[In the treatment of this disease, we must enquire carefully into the diet of the patient. All animal food must be well cooked, and the general diet accompanied with a rather full admixture of condiments, such as salt, pepper, mustard, spices, &c. The frequent use of the flesh of the pig must be avoided. It is not improbable that the use of certain fresh-water fish may be occasionally the cause of tænia.]

In spite of all prophylactic care, however, tænia will prevail, and the question, then, is, how to expel the entozoon with most surety, celerity, and with least inconvenience to the patient. This has long been a question for consideration, even from the days of Dioscorides, and concerning which the public as well as the profession have alike busied themselves. The result has been that a legion of particular drugs and pharmaceutics have at various times been proposed, and for a time each has been regarded as the remedy *par excellence.* To allude to them is quite unnecessary, except to call to mind those which in very modern times have been regarded most favourably. These have been the rectified oil distilled from turpentine, the decoction of the root of the Punica granata or pomegranate, and the infusion of the flowers of the Brayeria anthelmintica, or Abyssinian Kosso. That all three are useful there cannot be a doubt; but the first occasionally produces irritant symptoms referable to the urino-genitary and nervous apparati, particularly in full habits and plethoric people; the second is not always readily procurable in a sufficiently fresh condition for use; and the third has to be taken in a repulsively—bulky amount, at one time was exceedingly dear, and is always liable to being either stale or adulterated. Valuable, too, as these vermifuges are, there yet hangs about their use a considerable degree of uncertainty; so that to possess an agent less nauseous and irritant than turpentine, more sure than pomegranate, and less bulky and less expensive than Kosso, is no doubt a great advantage. That we do possess such a drug, I am decidedly of opinion, as also that the three favourites I have just named will be gradually, but surely, displaced by it, except in out-of-the-way and country places, where a command of drugs is not at hand, and where *turpentine*, of course, will continue to be employed. The drug to which I allude is an oleo-resin prepared from the root-stock and frond bases of the *Lastrea filix mas*, or male fern. The plant itself is, indeed, no new member of the materia medica, as even Theophrastus, Dioscorides, Pliny, and Galen, and old Gerhard, Andry and Marchant, in later days, have commended it. But from its having been used "in the rough," as it were, from spoiled, useless, or inert samples having been employed, and from its being often combined with other agents, it got, on the one hand, to be neglected as uncertain, and on the other hand, to be considered as having obtained a credit really due to the other ingredients by which a dose of it had been followed, or with which it had been combined.

In 1776, however, Madame Nuffer, (the widow of a Swiss surgeon,) of Murten, in Switzerland, obtained great repute from possessing a secret remedy for the ejectment of tapeworm. The secret was at length purchased by the King of France for between £700 and £800 of our money; and when it was afterwards made public, it appeared that in rather a complex piece of preparation and purgation the powder of the male fern root was the *pièce de resistance.* Once more the fame of the remedy arose, but only, as it happened, to be again silenced, for after some considerable failures, it was deemed of uncertain value, and what virtue the method did possess was regarded as rather due to the mixture of calomel, gamboge, and scammony, by which the dose of fern root was followed, and which mixture had long been considered a powerful vermifuge, having received the significant title of the *pulvis trium diabolorum*, or the powder of the three devils!

Though having thus lost its *prestige*, practitioners remembered that this agent, "fern root," had been famous from the earlier days of medicine, that Madame Nuffer's remedy proved undoubtedly very frequently successful, and that hence the failures with it were perhaps due to untoward circumstances, capable of being, though not yet guarded against. At length a physician of Geneva, M. Peschier, to ensure as much certainty and concentration of strength as possible, prepared an "oleo-resin of male fern" by digesting the frond buds in sulphuric ether. This was used successively by the producer, by Hufeland, Ebers, Radius, Schönemann, Salzmann, Tott, Fosbrooke, and others, and the collective judgment was, that this oleo-resin exceeded all other anthelmintics in rapidity, in certainty, and in comfort to the patient. Radius, however, still thought that the *head* of the worm was more surely to be found after the employment of pomegranate; Bremser regarded it as a successful agent against the tænia (Bothriocephalus) lata, but not against tænia solium; whilst Mayor asserted the tænia lata to be expelled by the oleo-resin, but that tænia solium only yielded to the most fresh powdered fern root. From 1833 to 1835, attention was strongly directed to the value of this oleo-resin, in our own country, by Dr. Christison and Dr. Fosbrooke; but even as late as 1850, Dr. Pereira continued to write: "Numerous testimonies of its efficacy have been published. I have tried it in several cases of tapeworm, but without success." It was not until about five or six years back, when renewed accounts of its power and trustworthiness were published in some Edinburgh journals, that it became introduced into more general employment. Since then, Drs. Christison and Gull, in particular, have amply illustrated the power and trustworthiness of the drug. According to the former, his "experience of the male shield fern corresponds precisely with the much more extended observations of Peschier, at Geneva, more than a quarter of a century ago;" whilst the latter states that the drug had been given in nearly 200 cases of tapeworm at Guy's Hospital, and that it was esteemed the most convenient and effective remedy we have hitherto had. In confirmation of these encomiums, I can say, that having employed it since 1853, I have found it to be, on the whole, by far the most available of all remedies proposed against tænia. It may be given to very young children; I have given it in half-drachm doses to a child of four years of age; whilst Dr. Gill has prescribed it to a boy two years old in doses of a drachm and a half, without injurious effects. I have not myself given it to a pregnant woman, as, according to Salzmann, it possesses emmenagogue effects; how far this is the case, I know not, however. I generally order the "oleo-resin" in drachm doses, with an equal amount of sulphuric ether rubbed up with an ounce of mucilage. This is taken at five or six in the morning, on an empty stomach, and is followed, in about five hours, by an ounce of castor oil. The introducer (Peschier) regarded half a drachm of the oleo-resin as equal to three drachms of the "powder" in effect. I have generally found that in about four or five hours after the first dose the worm has been expelled, just before the time, indeed, when the castor oil is about to be taken. I have, however, known the "oleo-resin" to expel the worm within one hour after its reception into the stomach, and I have also known it to remain (in the case of a girl thirteen years of age) for a day and a half before operating, then to produce a motion, in which the worm was expelled. This girl made no complaint during the interval. Sometimes sickness is complained of, often not, as is also the case as respects the nauseousness of the drug. The latter does not seem endowed with any great amount of purgative power; frequently only one motion would be produced, were it not for the following dose of castor oil. The true value of the oleo-resin appears in its killing and dislodging power over the cestoid entozoon, its effects on the supporting organism being very slight comparatively.

The great test, of course, of the virtue of a drug against tænia is the fact of the *head* (or at any rate what is called the head) of the worm being expelled by it; for if this is not affected, however long may be the part expelled, reproduction of an entire length will soon again recur. But the difficulty is to know whether the complete expulsion has really taken place? The mere fact of a patient at an hospital not being able to produce the head is no proof it has not been eliminated. even after he has been told how to manage to look for it, and after it has been carefully described to him, so that he may know it when he sees it. If I were to judge of the value of the oleo-resin of the fern merely from the number of heads *I have had brought to me* after its employment, I certainly could form no very exalted opinion of its virtues. But judging from the constant ejection of a lengthened piece, the close approach made to the head, as shown by the very narrow portion which is usually presented to me, and the story told by the patients as to their mode of search and discovery, I am lead to think that the head is far more frequently dislodged and ejected than might be otherwise supposed. Further, it should be borne in mind that where the patients have been under the immediate observation of the physician as in-patients instead of as out-patients of an hospital, and where the nurse has been rewarded for her trouble in procuring the delicate filiform termination, it has been far more surely produced. "In eight out of twenty cases," says Dr. Gull, "it has been brought; in six of these under care in the hospital, the nurse was offered a premium for every head she found, and four out of six were so obtained." After the expulsion of the worm I generally put the patient upon a course of the tincture of the sesquichloride of iron in infusion of quassia.

The identification of the particular plant thus serviceable from time immemorial unto the present in dislodging "tænia" will be obtained by bearing in mind its various synonymical designations. It is the πτὲρις of Theophrastus and of Dioscorides and of the modern Greek Pharmacopœia of 1837, and also of Pliny; the Βληχνον and πολὺρριςου of other Greek writers; the Polypodium filix mas of Fuchsius and Linnæus; the Aspidium filix mas of Swartz; the Nephrodium filix mas of Richard, and the Lastræa filix mas of Bory and of Presl. It is the "common male shield fern" of the *vernacular*, and is met with almost everywhere in woods, dells, and on shady banks in Great Britain, and is a native of other parts of Europe, and of Asia, of the North of Africa, and of the United States.

The oleo-resin is prepared from what is called "fern root" by the herbalists. This "fern root" is made up of the foot-stalks of the fronds, the true rhizoma, and the scales and radicles, clothing them, and connected thereto. Only fresh portions of this so-called "fern-root" should be employed, but, if fresh, the plant appears to possess its virtues all the year through. These fresh portions are cut in pieces, and dried in a hot-press at a temperature not higher than 140° Fahr. They are then coarsely triturated, packed loosely in a percolator, and exhausted by sulphuric ether in the way of displacement. The greater part of the ether should then be distilled off, and what is left expelled by exposure in an open basin of glass or porcelain to a vapour-bath temperature for a few minutes. An inferor kind (according to the 'Edinburgh Monthly Journal,' June, 1852, from which I now quote) is to be found in the market, from which the ether has not been sufficiently or properly removed. The drug thus prepared is a dark-green, sluggish, syrupy oleo-resin, with a peculiar resinous smell and nasty resinous taste, the chemical composition of which is given by Luck in the "Annalen der Chemie und Pharmacie" for 1845. "Under the microscope it is seen," according to Dr. Gull, "to consist of a congeries of crystalline particles in the form of spiculæ and rhombic plates, scattered or variously aggregated into stellar masses."

Before concluding this part of the subject, I may mention, that during the last few months some attention has been directed in Germany to a new and South African remedy for tapeworm, and for which an absurdly high price has been asked. It has still more lately been discovered that this new drug, called Panna, or Radix panna is identical with a root called Inkomancomo, sent from Port Natal as a famous remedy for tænia, greatly employed by the Zulu Kaffirs, and which was laid before the Assembly of Apothecaries at Hamburgh in 1851. Another and chief point of interest to us at present is that this new remedy turns out to be the rhizoma of a fern, or as Martius states, of the *Aspidium athamanticum* of Kunze. This Aspidium, again, in the opinion of some good filicologists—Mr. Thomas Moore. e. g.—is more properly a Lastrœa, the *Lastræa athamantica*, our own remedy being, it will be recollected, *Lastræa filix mas.* According to Dr. Callaway, of Natal, the dried rhizoma of the fern, having been ground to powder, is administered by the Kaffirs in milk or milk-and-water, and taken fasting. Sometimes this mixture is allowed to ferment. At a late meeting of the Pharmaceutical Society, Mr. Daniel Hanbury communicated these and other interesting particulars from Martius, of Erlangen, relative to this new remedy for tapeworm. In the discussion which followed, Mr. Alchin is reported, in the *Pharmaceutical Journal*, to have noticed the fact that the plant described by Dr. Martius belonged to the same genus as the male fern, which it appeared to resemble in its medicinal effects. "He thought it interesting that the two substances should have been employed for the same purpose in different parts of the world."—*Lancets, May* 2 *and* 9, 1857, *pp.* 449, 475.

164.—ON THE USE OF KAMEELA AS AN ANTHELMINTIC; AND ON THE DEPENDENCE OF TAPEWORMS ON UNWHOLESOME ANIMAL FOOD.

By Dr. Charles Alexander Gordon, Surgeon 10th Regiment of Foot.

[This plant is the Rottlera Tinctoria, Section Crotoneæ, of the N. O. Euphorbiaceæ (Loudon). The author considers it more efficacious and much cheaper than Kousso.]

The success and rapidity of effect of the kameela in removing tapeworm in the cases of soldiers of the 10th Regiment. to whom I administered it, were such that I did not consider it worth my while to keep notes of them after the first two or three; nor, indeed, were the men to whom it was administered latterly taken into hospital, for they soon became aware of the wonderful efficacy of the remedy, asking of their own accord for a dose of it, after which they invariably parted with the worm in the course of a few hours, and then went on with their military duty as if nothing had happened; while, as I afterwards ascertained, considerable numbers did not think of "troubling the doctor at all," but, on suffering from the characteristic symptoms of the worm, applied for the kameela to the apothecary, and always with the same effect.

Tænia appears to be of very frequent occurrence among the white troops in India. I have not observed it to be unusually common in the Lower provinces, but in Upper India, and especially the Punjaub, cases of it are of remarkable frequency; and I have been told by some medical officers who have been stationed at Peshawur, our nearest cantonment to Affghanistan, that they firmly believe every third soldier has had tapeworm during the two years regiments usually remain there.

From what I have been able to ascertain on the subject, natives are not particularly liable to tapeworm, and certainly not more so in the north-western parts of India than in lower Bengal. This is generally attributed to their almost total abstinence from animal food; and when we consider that both Hindoos and Mussulmans—all except the very lowest classes—abhor pig's flesh, while our own countrymen are rather partial to it, and the common soldier, probably, not very particular regarding the early history of the animal that is converted into pork for his use, an additional circumstance in favour of the transformation of the cysticercus constituting the "measles" of pork into Tænia, is thus disclosed to us.

Those who have escaped the misfortune of having had to pass some years in India, can form no idea of the vast herds of lean, half-starved pigs that roam over the fields and waste grounds in the vicinity of villages, neither can they have any conception of the nature of the food on which these pigs subsist.

The natives of India perform their ordinary natural functions in the open air, on a piece of waste ground left for the purpose on the outskirts of every village, and where, morning and evening, men, women, children and pigs dot the ground at short intervals from each other. In an incredibly short space of time after the villagers have left the field, it is as clean as if they had never been there, while the herd by which the clearance has been effected may be found in some shady place near or close to a tank, with the exception of a few of the more insatiable that have gone to hunt for dead dogs, cats, cattle, and Hindoos that have paid the debt of nature since the previous meeting, and have been thrown or left on the plain to be devoured by domestic animals or vultures.

These circumstances hold good more as regards the south-western provinces, where there are comparatively few rivers, than in lower Bengal, where rivers are numerous, and into which the dead of all descriptions are thrown; some clue may therefore be obtained to the cause of the greater frequency of diseased pigs' flesh in the one portion of the country than in the other; and as a consequence, the greater prevalence of tape-worm in the one part than the other.

Pigs, however, are not the only animals that live in this filthy manner in India; cattle and sheep, that are so particular in their food in Britain, acquire degenerate tastes in India; and it is needless to enter into similar particulars regarding ducks, fowls, turkeys, and pigeons, all of which are more or less used as food by our countrymen there.

I have thus alluded to these matters with a view to indicate some circumstances that most unquestionably tend to vitiate the quality of the animal food upon which our troops in India must subsist, and I think I have at least shown a sufficient cause for almost any amount of disease in the bodies of these animals; as also why their flesh should be more liable to become diseased in upper India than in lower Bengal.

I may observe, that the remedy most generally used in India for tapeworm, next to kameela, is the root of the bitter pomegranate; as, however, severe abdominal pain, nausea, and severe convulsions not unfrequently follow its use, it is by no means a general favourite.

The more common vermifuges employed in this country are well known to the natives of India, such as Dolichos pruriens, and turpentine. They also employ the infusion of gentian and chyretta, as well as several other powerful bitters; all, however, are comparatively uncertain in their effect; and many, especially the turpentine, are so disagreeable to take, that many persons would rather submit to the torment of an intestinal worm than take so disagreeable a remedy.

With kameela there is no unpleasant effect. It is not even necessary to take a dose of purging medicine as a preparative; and beyond a trifling amount of nausea and griping in some instances, no unpleasant effects are experienced; while by far the greater number of persons to whom it is administered suffer no inconvenience whatever beyond what they would from a dose of ordinary purging medicine.

The following are abstracts of the first three cases that came under my observation in which the kameela was administered, the notes having been taken on the spot and at the time, namely:—

1.—T. S., aged 32, 10th Foot; admitted January 25, 1854, complaining of general debility, from which he had fallen down while on parade. He had suspicions of being affected with intestinal worms; tongue was coated with a white fur. Common quinine mixture was given three times a-day until the case was more fully watched. On the 29th ʒj. of kameela (rottlera tinctura) was administered, mixed up with water, at 9 a.m., and a similar dose at noon. At 1 p.m. he felt a little sick, had no griping, was not violently purged, but passed about twenty feet of tænia lata, the head apparently coming away as well. He immediately felt well, had no more medicine, and on the 31st was discharged cured.

2.—Private C. D., 10th Foot; admitted 22nd January, 1854, with syphilis primitiva. While being treated for that disease became affected with tænia. Kameela was accordingly given in ʒj. doses, but five doses had to be given at intervals of three hours before any effect took place. A large quantity of tapeworm was then evacuated, and he immediately felt himself quite well. He was discharged, cured of both diseases, on 6th February, 1854.

3.—Private S., 10th Foot; admitted into the Dispensary May 25, 1854, stating that he was voiding pieces of tapeworm, to which he had been subject for a period of two months; and, having in the early part of the attack been treated with kameela, he voided eighteen feet of worm. He now looked healthy. A dose, consisting of 5 grains of calomel, and ʒj. of compound powder of jalap, was immediately given, about six o'clock, a.m., ʒj. of kameela about nine, and another about noon. At two p.m. he voided one piece of tapeworm upwards of twenty feet long, including the filamentous portion near the head. On the 26th he felt well, and was discharged.

In the absence of a magnifying glass, it is difficult to say with precision whether the head is discharged along with the rest of the animal; but, so far as the eye can judge, I am almost positively certain that it is. The worm has, in every case observed by me, been discharged in a dead state; but whether the tendency to the generation of other tæniæ is removed by the medicine is more than doubtful. In fact, from the nature of the food of animals that themselves furnish the food of Europeans in India, the wonder probably is, not that tapeworm is of frequent occurrence among them in certain districts, but that any person is free from it; while it must be equally clear, that the tendency to its development in the intestinal canal can only be removed by a removal of the causes upon which it, in all probability, depends, namely, by the selection of a superior description of food for our troops than what they now obtain, and by the establishment of rigid sanitary regulations among the native community. The latter involves the destruction of the prejudices of a religion and of a race that have undergone no improvement for thousands of years.

There is an article on the Kameela, written by Dr. Thomas Anderson, of the East India Company's service, in the Indian Annals of Medicine for October, 1855. Many of his experiments were performed in the hospital of the 10th regiment, with which for a time he did duty. In this paper there is a very excellent description of the substance, as well as of the various modes in which it was administered. Suffice it to say that we prepared a spirituous tincture by adding Oj. of alcohol to ℥jv. of the powder, and then filtering. We never succeeded in obtaining more than ℥vj. in this way, and of this ʒj. in a little mint-water was generally found to be a sufficient dose, ʒij. being in some cases required, and perhaps in one or two, ʒiij., but I have never seen the remedy fail in removing the worm in a case where there were unequivocal symptoms of its presence, for, as you are well aware, many persons insist upon it that they are suffering from intestinal worms, and yet have no absolute proof of being thus affected. Such persons are frequently met with in India; these symptoms being in reality due to liver, dyspepsia, brandy, or tobacco, and it must be obvious that no amount of kameela or anything else could remove a tapeworm that had no existence.—*Med. Times and Gazette, May 2, 1857, p.* 429.

165.—A NEW CAUSTIC IN THE TREATMENT OF LOCAL CANCEROUS AND CANCROID DISEASES, &c.

By Dr. J. Y. Simpson, Professor of Medicine and Midwifery in the University of Edinburgh.

[The two methods which are usually adopted for the removal of local cancerous diseases are excision and cauterization. Of late years escharotics have received favourable attention, and especially on the continent of Europe; this may be the result of experience. We know that excision is extremely seldom followed by a permanent cure; on the other hand semi-malignant growths have sometimes been successfully removed by caustics, even after the knife had previously failed.]

The practice of cauterization, or the treatment of rodent and obstinate ulcers, the extirpation of superficial cancerous and cancroid diseases of the skin, lips, cervix uteri, &c., by escharotics, would probably greatly extend among the profession, provided we possessed a caustic which was at once effective, and at the same time simpler in its mode of application, speedier in its action, and safer in its use than the caustics which have been hitherto used. It is with the hope of pointing out to my professional brethren a caustic possessing these properties that I venture to submit to them the present observations. But let me first speak briefly of the relative advantages and disadvantages of the caustics that at the present time are best known and generally adopted in practice.

Caustics hitherto used.—Different forms of caustic have been employed to destroy cancerous and cancroid parts, sluggish and intractable ulcers, &c. The principal varieties at present in use with the profession are the following:—

I. *Concentrated alkalies,* as pure potassa, soda, and lime, or the combination of two of these, potass and lime, in the form of the Vienna paste, and the solid caustic of Filhos. These alkaline escharotics, however, though very useful in some other indications, are not frequently resorted to in the treatment of malignant ulcers and growths, as their use is often attended with oozing of blood, and their destructive power does not penetrate sufficiently downwards to kill and enucleate any very deep morbid tissues.

II. *Concentrated acids,* as the sulphuric, nitric, muriatic, &c. When applied in their liquid form these acids form most powerful and rapid caustics. It is difficult, however, or, indeed impossible, to control and limit their action within proper bounds, or to prevent their running and spreading to the neighbouring healthy surfaces and tissues, when they are applied at least with sufficient freedom to be actually useful. To render them more easy of employment in practice, attempts have been made to impart to them a comparatively solid consistence, by forming them mechanically into a kind of paste, with powders and other substances immediately before their application to the diseased parts. In this way Professors Rust and Velpeau have applied to cancroid and cancerous parts sulphuric acid made into a pultaceous mass with powder of saffron; and MM. Rivallié and Maisoneuve have used monohydrated nitric acid, solidified to the same extent with tow, lint, asbestos, &c. In such semi-solid forms these strong acids are not so apt to implicate the contiguous healthy parts, though they are still far from being very simple and manageable in their application.

III. *Metallic preparations.*—A variety of metallic salts and compounds have been employed as caustics; such as various compounds of arsenic, antimony, copper, mercury, platinum, gold, zinc. &c. &c.

Among all these metallic compounds, however, the two most frequently used at the present day for the treatment and elimination of ulcers and deposits of any great extent are arsenical preparations and chloride of zinc.

[The form of arsenic which has been chiefly employed as an escharotic is the arsenious acid. Dupuytren's arsenical powder consisted of from one to five parts of arsenious acid mixed with a hundred parts of calomel. The caustic of M. Manec, which is extensively employed in France in the present day, is formed of one part of arsenious acid, seven or eight parts of cinnabar, and four parts of burnt sponge, formed into a paste with water. One disadvantage connected with the use of arsenic as a caustic is the great amount and duration of local pain and irritation which it often produces, but a still graver objection is the danger of its absorption into the system. The chloride of zinc has been very extensively used in this country during the last ten or twenty years. It will only act upon an open or exposed surface, and not when the epithelium is entire. It is a very effective, valuable, and safe escharotic, killing the morbid tissues to which it is applied to a depth corresponding with the thickness of the layer of chloride that is superimposed, and very rarely being followed by any serious constitutional disturbance. The principal drawback to its use is its great tendency to deliquesce and spread, and to prevent this it is generally recommended to be made into a paste with flour or gypsum, and water, in the proportion of one part of the chloride to two, three, or four of the flour or gypsum.]

The caustic to which I desire to call the attention of my professional brethren, and which I have used often during the past year, is free from these and most other drawbacks. It consists of sulphate of zinc, applied either in the form of powder, or strong paste, or ointment, to the affected part.

Sulphate of Zinc as a Caustic.—Sulphate of zinc is a drug extensively and daily employed by medical men in solution, in the form of collyria, of lotions, of injections, &c. No writer, however, has, as far as I am aware, hitherto pointed out that when applied as a fine *powder* to an open and diseased surface, sulphate of zinc acts as one of our most powerful and manageable caustics. In using it for this purpose I have always employed it dried or anhydrous, and finely levigated. Sometimes I have applied it in the form of a simple powder, sometimes in the form of a paste made with glycerine, and sometimes as a strong ointment. To work it into a paste, about one drachm of glycerine to an ounce of the dried powder is required; and in this form it keeps for any length of time ready for use. A caustic ointment may be formed by pounding together two drachms of axunge with an ounce of the dried sulphate of zinc.

When used in the form of a powder, paste, or ointment to an open or ulcerated surface, the part to which it is applied is rapidly destroyed to a depth corresponding to the thickness of the superimposed layer. the slough, eschar, or devitalized part is of a white colour, and usually separates on the fifth or sixth day, leaving behind it (if the whole morbid tissue is removed) a red, granulating, healthy, and rapidly cicatrizing wound. I have sometimes seen the edges of the wound already more or less puckered and contracted at the time of the separation of the eschar. The white slough or eschar itself shows no tendency to chemical or putrefactive decomposition, but is firm in texture and free from taint or odour. If we apply the sulphate of zinc in any case of malignant or semi-malignant ulcer or deposit it will require to be repeated immediately after the first or preceding eschar separates, provided any yellow or unhealthy tissue remain at the bottom or in the sides of the wound, or if the surrounding hardness is not yet quite dispelled. After the last eschar is removed the remaining wound or sore will rapidly heal up under any common application, as black wash, astringent lotions, water dressing, &c.

Sulphate of zinc, like chloride of zinc, will not act as a caustic where the epithelium is entire, or unless it be applied to a broken or open surface. This is at once an advantage and a disadvantage; an advantage in so far that it prevents all fear of the caustic ever unnecessarily affecting any of the healthy contiguous surfaces and parts, and renders its application and use far more simple and certain; and a disadvantage, because when we wish to apply it to a non-ulcerated structure, we must first remove the intervening epithelium by a small blister, or more effectually by the application of an alkaline or acid caustic. A paste made with sulphuric acid and powder of sulphate of zinc will both, perhaps, at once remove the epidermis, and give at the same time the action of the mineral caustic. If too liquid it may be prevented from spreading beyond the desired spot by enclosing that spot within a circle of oxide of zinc powder, or within a ring made with an oxide of zinc paste.

The local inflammatory reaction around a sulphate of zinc eschar is generally slight and transient. I have never witnessed any very marked effusion or swelling in the surrounding parts, except where the caustic was used in the neighbourhood of parts containing a large quantity of loose cellular tissue. Nor have I ever seen the general system affected by any absorption of it, or any special constitutional symptoms or disorder follow the topical application of sulphate of zinc, however freely and lavishly used. Like other strong caustics, its action is usually, but not always, attended for a few hours with considerable local pain and burning. This local suffering, however, generally disappears more rapidly with sulphate of zinc than with arsenic or chloride of zinc, and may always be relieved when necessary by the temporary use of anæsthetics or opiates, or by applying locally along with it, or before it, a very small quantity of sulphate of morphia. The devitalized part or eschar also produced by sulphate of zinc separates sooner than after most other caustics. The eschar made by arsenious acid seldom separates before the sixteenth or eighteenth day; that made by the chloride of zinc usually separates from the tenth to the twelfth day. I have generally found the eschar made by sulphate of zinc to separate as early as the fifth or sixth day.

The advantages of the sulphate of zinc, as compared with other caustics, are, therefore, in general terms:—1. Its powerful escharotic action; 2. The rapidity of its action; 3. Its great simplicity and manageableness; 4. Its facility of application; 5. Its non-tendency to deliquesce or spread; 6. Its perfect safety; and, 7, I believe I may add, its efficacy.

On this last point, however, more experience will require to be accumulated than I can yet offer. But I have seen not only the surface of cancroid or cancerous ulcers speedily perfectly excavated by its application, but the surrounding characteristic induration become at the same time rapidly absorbed, and the remaining wound very speedily cicatrize. I have seen, more than once, ulcers with irregular everted edges, dirty cavities and indurated bases and sides, and which had been open for years, become quite softened, closed, and healed over within five or six weeks after the first application of the caustic. In spreading epithelial or cancroid ulcer of the cervix uteri, I have found in as brief time, under the free local application of powdered sulphate of zinc, the ulcerated surface exfoliated, the sanguineous and sero-purulent discharges arrested, the parts temporarily, at least, if not permanently, cicatrized, and healed, and the patient's health, strength, and spirits restored, though, when first inserting the caustic, I believed the disease to be altogether beyond the reach of any remedial measures.

Let me add here, that I have tried as caustics other metallic sulphates besides the sulphate of zinc. The sulphates of iron, nickel, &c., have a similar escharotic action, without presenting, as far as I know, any special claims or advantages.

In a preceding paragraph it has already been remarked that many of the most famed secret pastes and applications that have at different times and in different countries been in fashion for the cure of cancer, contain arsenical preparations as their essential and efficient base. Perhaps it may be found that sulphate of zinc is the principal ingredient in other secret caustic remedies. A few days ago, after showing some examples of the caustic properties of sulphate of zinc to Dr. Johnston, of Worcester, Massachusetts, during a brief visit which he paid to Edinburgh, that gentleman stated to me, that from accidental information which he had obtained from a druggist, he believed sulphate of zinc to form the basis of one, if not more, celebrated secret American applications for the cure of cancerous disease.

Caustics are often used in practice for other purposes than the extirpation of cancerous and cancroid malignant and semi-malignant ulcerations and deposits ; and I have successfully employed sulphate of zinc in fulfilling most of the indications for which escharotics are resorted to, as for example—

1. In the treatment of indurated inflammatory ulcers of the cervix uteri. To this part it can be readily applied, either through a speculum, or still more easily by means of a small ivory or wooden cylinder and piston, like the common leeching tube, or like Dr. Locock's glass tube for carrying silver solution ; or in the form of a medicated pessary, made up with a small quantity of axunge or glycerine.

2. In cases of lupus and rodent non-malignant ulcers of the nose and face, and other integumental parts. Here we must not forget Rayer's rule, that not one, but a succession of applications of any caustic, is generally necessary for ultimate success.

3. In the annoying and intractable ulcerous forms sometimes assumed by certain cutaneous affections. Thus, I have seen it arrest a case of *Impetigo Rodens*, which, in despite of various applications, had gone on progressing for two years.

4. In eating down the small red sensitive tumours so common at the orifice of the female urethra, and in the neighbouring vulvar mucous surfaces.

5. In destroying ulcerated condylomata and warty excrescences.

6. In several cases I have easily introduced the sulphate of zinc and glycerine paste, by means of a small catheter-like tube and piston, into the proper cavity of the uterus, to cauterise the open surfaces and diseased structures leading to obstinate menorrhagia ; and which deep points it is, I believe, sometimes difficult, or indeed impossible to reach with any other efficient caustic. In the uterine cavity, as elsewhere, sulphate of zinc acts only upon any abraded and diseased surfaces that exist, and not to any extent upon the parts covered with healthy mucous membrane.

7. I have tried to take advantage of the highly contracting power of the cicatrices left by sulphate of zinc in the replacement and sustentation of chronic prolapsus of the uterus and bladder.

It will, perhaps, be found also adapted to the treatment of some obstinate ulcers of the limbs, and to the early cauterisation and destruction of syphilitic chancres and pustule maligne.—*Med. Times and Gazette, Jan.* 17, 1857, *p.* 55.

166.—ON THE TREATMENT OF CANCER BY DILUTE SOLUTIONS OF THE CHLORIDE OF ZINC.

(Cases under the care of EDWARD STANLEY, Esq., F.R.S., &c.)

We give in some detail the particulars of several cases in which Mr. Stanley has pursued the plan of treating cancer by much-diluted solutions of the chloride of zinc. Their results certainly prove that the destruction and enucleation of an ulcerated cancerous tumour may be effected by the use of solutions so weak as to be all but painless, and without necessitating the confinement of the patient to bed for a single day. Without venturing at present to assert that this plan, when persevered in in a great number of cases and in various conditions of health, will be found to be absolutely void of danger, yet most will doubtless admit that the risk attaching to it will prove to be infinitely small, far less than that of excision, and that which attended the use of arsenical pastes. As far as we know, chloride of zinc, when used in its most dilute solutions, never causes deleterious effects from its absorption into the system, nor does its application ever tend to excite erysipelatous inflammation of the part. An operation for the removal of a cancer, involving as it does the exhibition of chloroform, a considerable loss of blood, a period of a week or so in which the patient is feverish and ill, and takes little food, and subsequently a considerable suppuration, must be granted to be likely, even in those cases in which the patients recover well, not to have exerted any beneficial influence on the subsequent health. And such indeed is but too frequently observed by those who follow up their cases after dismissal. It is not at all uncommon to find patients who have never regained such health as they had prior to the excision, although their recovery from its immediate effects may have been as satisfactory as usual. Without, therefore, saying anything whatever as to the probability of the return of the disease being greater or less after one or the other method of removal—for as to this we have as yet no facts, and to speculate would be worse than useless—we may safely assert that the plan which Mr. Stanley is trying possesses some very important advantages. Nor is it among the least of these that it may be expected to prove useful in certain cases not well suited for the knife, as, for instance, where the cancer is deeply ulcerated and borders upon important parts. In some regions of the body it will be inconvenient of application, while others will be particularly appropriate for it. On the tongue, in the cheeks, on the lips, &c., it can manifestly be used but very imperfectly, and will probably never supersede the knife; while it may be applied with ease and efficiency to cancers of the breast, or indeed of any well-exposed surface, and particularly to those of the penis or of the extremities.

While on the subject, we may just notice as an additional fact a case in which Mr. Hutchinson has been employing a solution of the strength recommended by Mr. Stanley against a large recurrent fibroid tumour of the uterus. The woman, an out-patient at the Metropolitan Free, had been twice operated upon during the past year, but after each the tumour had again appeared and increased with great rapidity. At the time the trial of the solution was made it had grown to the size of an infant's head, and filled the uterus, projecting a little at the open os. The plan adopted was to pass a small catheter into the middle of its structure, and gradually inject into different parts about two ounces of the solution (one ounce of Sir W. Burnett's fluid to eight of water.) This was repeated every third day for about three weeks, and had the effect of causing some fragments of the growth to slough and come away. They were, however, of but small size when compared with what remained; and as the tumour went on increasing it was at length desisted from. No ill symptoms had been caused, although a good deal of smarting would generally follow the injections.

Case 1.—*Ulcerated Cancer of the Breast—Use of the Solution—Enucleation of the Tumour—Recovery.*—Mrs. A. F., aged 69, an ill-nourished and feeble old woman, of anxious, careworn expression, but of general good health, was admitted into Sitwell ward, Nov. 13, 1856. Her history was as follows:—She had always lived in the country, in the enjoyment of good health, till fifteen months ago, when she first perceived a small hard swelling, about the size of a nut, in her left breast; this gradually increased in size, accompanied by occasional severe attacks of pain. About four months ago the skin near the nipple ulcerated; the nipple has entirely disappeared; the centre of the gland is occupied by a tumour of about 2½ inches in diameter, of stony hardness and considerable weight; the ulcerated surface is about an inch in diameter, its edges are raised, and everted, the discharge is sanious and very fetid; the glands in the axilla are large and indurated. The chloride of zinc lotion was applied, and the patient put on a nutritious diet. On the 22nd of November, one part of Sir W. Burnett's solution of chloride of zinc, with six parts distilled water, in which small pieces of lint were soaked, was adjusted to the size of the ulcer; the application was removed every two hours; it however caused much pain, and was therefore further diluted with two more parts of distilled water.

Dec. 1st. The application of the lotion has formed a greyish slough over the whole of the ulcerating surface, which is dry and unaccompanied by fetor. The patient's general health remains good; the lotion has been applied six or eight times in the course of the day, and has caused but slight pain.

This treatment was continued till the 24th of December; a large mass of the slough, nearly two inches in diameter, was removed, and the exposed surface was covered by healthy florid granulations; the upper margin still remaining indurated, the lotion was directed to be applied to that border only.

Jan. 2nd. The lotion, causing some considerable irritation, was discontinued for some days, but was then resumed for four days.

Jan. 30th. The cavity is half its former size, the upper border remains hard, but to a smaller extent; the granulations are numerous, small and florid, especially at the lower border. Her health still continues good; small portions of slough occasionally come away from the upper border.

Feb. 11th. The solution is still applied to the upper border six times a-day; there is decidedly less induration on the upper margin, and the glands in the axilla remain in the same condition as before.

March 14th. The solution has been steadily applied since the above note; the hardened mass seems to have nearly all come away; cicatrization has gone on uninterruptedly, and the ulcerated surfaces are now about the size of a sixpenny piece.

March 19th. She was discharged. Her health still continuing good, and the sore all but healed.

Case 2.—Cancer of the Breast—Removal of the Skin after Freezing, and subsequent Use of the Solution—gradual Sloughing of the Cancer—Recovery.—Mary Burton, aged 68, was admitted into Lucas's ward, Feb. 18, 1857, on account of carcinoma of the breast of 5 years' duration. She states that when she first noticed the swelling it was very small, but at times painful. It remained much in the same state for six months; it then began again to increase, which it has done slowly up to the time of admission. She is a tolerably well-nourished woman, of cancerous aspect, but of general good health. She does not remember any other case of cancer to have occurred in her family. She has also an enlarged indurated gland of the size of a pea in the axilla. She was put upon a nutritious diet, with a pint of porter; and on Feb. 23, after the skin had been rendered insensible by the application of ice and salt, a circular incision was made, and the skin over the diseased mass removed. The application of the solution of the chloride of zinc, in the proportion of one part of Sir W. Burnett's disinfecting fluid to eight of distilled water, was commenced the next day. The application caused some pain, but of a trifling nature. The lotion was applied three times a-day for some days; the nutritious diet was continued, and the patient's general health remained good. A greyish eschar formed, one-eighth of an inch in thickness, on removal was extremely tough, and presented the appearance of moist wash-leather.

March 3. The lotion was discontinued, wetted lint was applied, and the casting-off of the slough was soon accomplished. After removal the breast appeared as if a portion of its gland had been scooped out, looked healthy, had a cicatrizing edge, granulations were abundant and florid. Some considerable induration remained around the edges.

March 16. The solution was again applied, in the proportion of one part to nine of water, which has been continued up to the present time, small portions of slough being removed daily. The induration is gradually becoming less. The patient still remains under treatment.

April 22. The small sore which now remains is perfectly healthy, and fast healing.

Case 3.—Cancer of the Breast—Excision of the Skin after Freezing, and subsequent Use of the Solution—complete Enucleation of the Tumour on the Eighth Day—Recovery.—Mary Poyner, aged 44, a delicate, anæmic, though tolerably stout woman, was admitted into Sitwell ward with a tumour of the left breast of a cancerous nature (about the size of a walnut.) On examination a swelling was felt, as it were, imbedded in the mammary gland immediately below and around the nipple, of carcinomatous hardness; the skin over the tumour was puckered, the nipple retracted. She also had an enlarged, though not indurated, gland in the axilla. She complained of sharp darting pain in the breast. She was also often troubled with menorrhagia. She was a single woman, and stated that she first noticed the lump on her breast fifteen months ago; it gradually increased till six months ago; since that time it has been stationary, but the pain has been more acute. She was put upon a nutritious diet, with a pint of porter and four ounces of wine daily; and on March 18, after local anæthesia had been produced by the freezing mixture, the skin was removed to the extent of an inch in diameter, including the nipple. Cold was applied for some time, on account of slight hemorrhage; and on the day following, the lotion, in proportion to one part of the solution to eight parts of distilled water, was applied to the wound. It was repeated two or three times during the course of the day, the application causing slight pain. It was afterwards continued, in the proportion of one to nine, for seven days, when it was entirely left off; and on the eighth day the entire slough was thrown off. No induration remained around, the granulations looked healthy, though pallid. A bread poultice was applied, and the wound has now considerably contracted, and the patient will be discharged in a day or two. The gland in the axilla is scarcely to be detected, and the patient's general health has considerably improved since she has been under a course of cinchona with the sulphate of iron.

Since the above note the wound has quite healed, and no trace of induration now remains.

Case 4.—Large and deeply Ulcerated Cancer in the Groin, secondary to Chimney-Sweep's Cancer.—Use of the Solution with some Benefit.—Edward Gillett, aged 39, was admitted into Darker ward, under the care of Mr. Stanley, on Dec. 29, 1856.

History.—Is by employment a chimney-sweep, living in Brookmarket; of free habits. He states that, about two years ago, a cancerous mass was removed from the scrotum by Mr. Stanley; all did well, and the wound healed. About eight months ago a small hard swelling appeared in the left groin, somewhat like a boil; this ulcerated, and its induration had gradually extended, the ulceration also extending. The pain was slight at first, but lately it has become very severe. On admission it presented the following appearance:—

In the left groin was an excavated ulcer, about three inches in length transversely, and one in its vertical direction, and about an inch in depth. Its interior was irregular, presenting at some points eminences, at others depressions. There was a constant discharge of a thin sanious pus, of a very fetid character. The edges of the ulcer were everted and ragged; its margin was indurated for about an inch; the skin covering the induration was of a dusky-purple hue.

Lotio sodæ chlorinatæ was ordered, to free the ulcer of its fetid smell; pil. saponis c. opii, gr. v. o. n., as the patient complained of the pain being so severe as quite to prevent him ever having rest at night.

The ulcer remained much the same, and on

Jan. 2, a lotion, composed of one part of Sir W. Burnett's disinfecting fluid, to six parts of water, was applied on lint, which was adjusted to the size of the cavity, and ordered to be changed every two hours.

3rd. As the first application pained him considerably, the strength of the lotion was diminished, one part to eight being now employed. A yellowish eschar has formed over the ulcerated surface since the application yesterday, and the fetid character of the discharge has subsided. The pain was much less, though it still interferes with his rest at night. He was ordered—

Haust. morph. acet. gr. ½ o. n.

10th. Since the application of the fluid the cavity has greatly enlarged in width and depth. The general health of the patient is good. A large mass of diseased structure has come away. The pain attending the application is now but slight.

12th. As there was some inflammation of the surrounding integument, he was directed to leave off the lotion for a time.

19th. The inflammation having entirely subsided, he was ordered to renew the application.

22nd. Small portions of the diseased structure are continually coming away. At the upper part are some healthy granulations. The hard circumference has considerably diminished. He continues to apply the lotion every two hours, which now does not give him pain, and he sleeps well at night without the morphia. His health is good.

In this case the ulcer was too deep and extensive to permit of a cure being obtained, and the ulceration still extending, the man subsequently left the hospital. The application had, however, well shown its power in procuring the sloughing of many portions of the cancerous structure, and a great consequent abatement of pain.—*Med. Times and Gazette, April* 25, 1857, *p.* 407.

167.—ON THE USE OF CHLORIDE OF ZINC IN THE TREATMENT OF CANCER.

By Dr. Edward S. Haviland, Edinburgh.

[The author has for some time past been engaged in the treatment of cancer by the process of enucleation, under the use of the well known escharotic chloride of zinc. The mode recommended of preparing and employing the remedy is not generally known.]

The escharotic, and where incautiously used, the destructive power of chloride of zinc was, as many as thirteen or fourteen years ago, most strikingly brought to my notice, by an unfortunate case, which came under my care, by a too liberal use of the remedy to destroy and slough-out a diseased gland, from which time I have always felt an interest in the subject.

Mr. Alexander Ure, of St. Mary's Hospital, was one of the earliest authorities on the use of escharotics, for the treatment of cancer, in this country; but, more recently, Mr. Langston Parker, of Birmingham, chose for the subject of his address, on the occasion of the twenty-fourth annual meeting of Provincial Medical and Surgical Association, held at Birmingham in 1856, "The Treatment of Cancerous Diseases by Caustics," which has since been published in the form of a pamphlet, wherein he has given a most able and concise *résumé* of the most recent discoveries on the subject, and in which he refers to all that has taken place regarding it upon the Continent, particularly to the wonderful exploits of the renowned Llandolfi, which may be seen by referring to the "Archèves Générales" for May, 1855, of which there is a translation in the 'Dublin Quarterly Journal' for November, 1855, and who employed not only the chloride of zinc, but various other chlorides, some of which were even of a more powerful nature, and where, from whose labours the latest and most approved method of using them may be learnt. Later still, Professor Beyk has recommended a paste which is less expensive and of easier application than Llandolfi's.

Dr. W. P. Brookes, of Cheltenham, has given an account of his experience of this remedy as far back as 1848, which may be seen in Braithwaite's "Retrospect of Medicine from January to June, 1849," vol. xix., with the history of four cases of cancer of the upper and lower lips, which he considered was attended with most favourable results, and one of which was perfectly cured under its use, and remained well up to the period of his writing, which was four years from the time of his treatment.

I will now proceed to give the mode of preparing the remedy. This may be done by making it into a thick paste with any absorbent powder, such as gypsum, flour, starch, or the powder of althæa or gum acacia; and I find the proportions necessary are either equal parts of the chloride and powder, two or even three of the former to one of the latter; or, what I prefer is, a mucilage of the purest gum arabic, made as thick as possible, or sufficiently viscid and glutinous to prevent its running, as, on account of the highly deliquescent nature of the chloride of zinc, it is apt to run over the sound and healthy skin, which it destroys almost with equal facility as the diseased structure, though a contrary opinion prevails. The preparation may be coloured with any vegetable colouring matter, which permeates into the subjacent tissue, indicating the depth which each dressing has penetrated, and materially facilitates the operations of the surgeon.

Next comes the mode of employing the remedy, which will slightly vary according to whether the skin is unbroken or not. When the skin is entire, having marked out the extent of the disease, apply either the acid nitrate of mercury or strong nitric acid, so as to completely destroy it over the whole surface, in order that the caustic may act more speedily, and after the heat and pain attending the destruction of the part has subsided, next apply the dressing, spread on calico or lint, the shape and size required; and over the whole apply a portion of wadding or cotton wool, to protect it from cold and absorb any moisture occasioned by the running of the dressing. The parts around, and especially below, should be protected from the action of the caustic, by a thickly-spread dressing of spermaceti ointment, holding as much chloroform mixed in it as it will take up, which will at the same time tend to allay the burning and pain during the action of the escharotic. Sedatives may be given with the same object, such as pills composed of opium, the compound soap pill, or Battley's solution; the state of the system being attended to, and the patient encouraged to take a generous diet, with wine and malt liquor after the first few days. At the same time, the constitution should be improved by administering cod-liver oil, and the different preparations of steel and quinine, especially the iodide of iron; and the iodide of arsenic may be given in combination with hemlock, with a view, if possible, to alter the cancerous diathesis. The following day a whitish eschar will be seen, through which incisions to the depth of the part destroyed should be made vertically through the tumour, and dressing spread on narrow strips of lint or calico should be carried to the bottom, and the same should be continued daily until the whole is destroyed, which will be in twelve or fourteen days, after which the dressings may be discontinued. The tumour will thus be enucleated in about thirty days from the commencement, leaving a granulating healthy surface, which will heal most rapidly with the ordinary resin dressing or the dry cotton wadding.

In case of an ulcerated or open cancer, the dressing may be applied at once, spread on calico or lint, the shape and size of the sore, which may afterwards be treated with incisions in the same way as that where the skin was intact.

Having made these general remarks I will now conclude by giving a shtor history of one of my cases in illustration of this mode of treatment:—

Mrs. D—, aged forty-eight, the mother of ten children, a spare, thin, and emaciated person; has a hard, circumscribed tumour in the right breast, with considerable surrounding infiltration, having all the characteristics of confirmed scirrhus, free from attachment, and nipple not retracted; feels sharp, darting, and lancinating pains shooting through the tumour, extending to the glands in the axilla, which are much enlarged. A small hard swelling was first perceived about eight years since, the origin of which she attributes to a blow. Until two years ago the enlargement was very trifling, when the catamenia ceased, but since then it has increased most rapidly, and the pain, which was at first very inconsiderable, has been much more severe in its character. The health is very materially impaired, though no very strongly-marked cancerous cachexia is observable in her countenance. There is no hereditary predisposition; but she has lost a sister by consumption.

Dec. 3rd, 1856. Commenced to destroy the skin over the full extent of the surface of the tumour by the application of strong nitric acid, the heat and pain of which having subsided, I next applied the escharotic, prepared and spread on linen (as described) over the part to the extent of which I had destroyed the skin, over which I placed a portion of cotton wool, and left it until the following day, prescribing one grain of opium every four hours to allay the pain, and to commence with one pill three times a day, composed of one grain of iodide of arsenic; twelve grains of sulphate of quinine; twenty-four grains of extract of hemlock: mix, and divide into twelve pills.

4th. The skin over the tumour, where the acid and dressing had been applied being perfectly destroyed, I made several vertical incisions from above, or the top part of the tumour, to the bottom, merely through the skin, as deep as the deadened part, when narrow strips of linen, spread with the dressings, were pressed down by means of a probe, to the bottom of the same. On account of her excessive debility and exhaustion, cod-liver oil was ordered, together with some steel medicine, with full meat diet, wine, and porter.

5th. The incisions were deepened, and the dressings applied as before. This was repeated daily to the

17th. When I found I had reached to the bottom of the diseased structure, from which time they were discontinued. The line of demarcation between the dead and living part was now very perceptible, and it afterwards became gradually more defined, until the entire separation around the tumour took place.

Jan. 4th. The thirty-second day after the commencement of the treatment, the tumour was enucleated entire, weighing at least a pound and a quarter, during a part of which time she suffered severely from influenza and bronchitis, which greatly retarded its progress. On the detachment of the tumour, a healthy granulating surface presented itself, which has since continued to heal most rapidly under the use of the ordinary resin dressing, and at the same time her health has most remarkably improved.—*Lancet, Feb.* 14, 1857, *p.* 161.

168.—ON CANCER OF THE STOMACH.

By Dr. LEES, Physician to the Meath Hospital.

Cancer of the stomach is a disease highly important from its frequency, its fatal nature, and its difficulty of diagnosis in many cases. It is a specific degeneration, and belongs to the class of "heterologous formations," the essential character of which consists in the presence of a solid or fluid substance, different from any of the solids or fluids which enter into the healthy composition of the body. We meet with all the different species of carcinoma in the coats of the stomach, the fibrous or scirrhous most frequently, next the medullary or encephaloid, and lastly, the areolar or colloid, which, though much less common than the other forms, yet occurs more frequently in the stomach than in any other part of the body. They occur separately, or in combination, as they are merely varieties of the same disease, for though these different names have been employed, and attempts have been made to establish them as distinct diseases, yet they merely differ in the relative amount and arrangement of their cells and fibres, and all may be classed under the term malignant or cancerous in its most extensive signification. All the coats of the stomach may be affected with cancer, or it may commence in any one of them separately, but it most frequently commences in the submucous cellular tissue. In advanced cases all the textures are often affected, but the general symptoms do not vary greatly, whatever may have been the primary seat of the disease, so that it is not easy to determine in which of the tissues the disease actually commenced, nor, so far as regards practice, is it of any importance. Scirrhus, or fibrous cancer, which is the most common variety, generally commences in the submucous connective tissue, which appears converted into a resisting whitish, fibro-lardaceous mass, and thus unites intimately with the mucous membrane on one side and the muscular coat on the other; the latter becomes pale, its fibres waste or degenerate, and the interstices are filled up by a slightly translucent and apparently crystalline substance, composed of cells which have replaced original organic constituents of the muscular coat, so that a transverse section would exhibit an appearance of whitish or bluish-white lines, perpendicular to the surface of the mucous coat; and the thickness is sometimes very considerable, being upwards of an inch, but it varies according to the diffusion of the deposit. Scirrhus is the form of cancer most frequently confounded with simple induration and hypertrophy of the coats of the stomach, which, though not itself of a malignant character, may sometimes occur with malignant disease at or near the pylorus, and is a result of the indirect operation of that, in common with other causes, which call for increased exertion of contractile force. It is owing to confounding this condition of hypertrophy with cancer, that Andral has considered cancerous affections of the stomach as the result of chronic inflammation, but they may be distinguished by "the preponderating increase of substance in the submucous cellular tissue and its want of uniformity, the accompanying cartilaginous hardness and closeness of texture, the fusion with the mucous and muscular coats, and particularly the alteration in the muscular tissue." The degenerative character of the new formation, and the deposition of cancerous deposits in other organs, particularly the liver, will be also a guide to us, and, in experienced hands, the microscope also may help to clear up the doubt, as if loculi of cell substance are mingled with the fibrous tissue; and if there are cells in the submucous tissue, which differ decidedly from normal formations, the probability is that it is cancer; but I am of opinion that we cannot attach great value to any structural character as an essential characteristic of cancerous formation, and I agree with Wedl, that, "in a histological point of view, it is impossible to lay down any precise definition, and it is only the degenerative character of the new formation that can allow this to be done, unless a criterion (?) be afforded in the deposition of cancerous growths in other organs." Mr. O'Ferrall exhibited a series of preparations at a meeting of the Pathological Society, illustrating the characters of simple hypertrophy as distinct from cancer—"The stomachs, in these cases, were distended and thickened; the section resembling that of a thickened urinary bladder and prostate gland; a probe could hardly be forced through the pylorus; the mucous, cellular, and muscular coats were hypertrophied, but distinct; *there was no ulceration* nor disease in any other part of the body." Dr. Lionel Beale asserts, that a microscopic examination of this hypertrophied tissue affords nothing more than the original elements of the tissue, with granular matter, and a few badly-defined cells. Dr. Watson states, that in preparations of true cancer of the stomach there is always a white sediment (in the bottom of the bottle) consisting of some of the matters peculiar to cancer, but there is no such deposit in simple hypertrophy. These distinctions are not mere anatomical refinements, but are of great practical value, if, as Dr. Watson truly observes, "they do no more than enable us to comfort the minds of survivors, and to relieve them from the apprehension that they also may be doomed as likely to become the victims of cancer." The morbid deposit often forms tumours in the sub-mucous cellular tissue, and protrudes the mucous membrane forwards, forming masses termed polypi, vegetations, fungi, and they may acquire a considerable size before the mucous membrane covering them appears to be implicated in the disease; but when much distended, by the projection of the tumour into the cavity of the stomach, it then gives way in one or more places to ulcerative absorption, and the morbid structure communicates with the cavity of the stomach. Medullary cancer thus usually occurs as a secondary product upon the scirrhous mass, and induces a rapid destruction of the mucous membrane, owing to the readiness with which its superficial portions are ruptured, particularly in the stomach. The mucous membrane may be affected primarily, and undergo certain peculiar changes. Rokitansky states "that it sometimes degenerates into an areolar cancerous tissue, which discharges large quantities of gelatinous mucous fluid; or it is converted into erectile tissue, as a fungoid growth, which becomes the seat of encephaloid infiltration, suppurates, and partially exposes the submucous scirrhous cellular tissue; or, lastly, it most frequently becomes the seat of a sloe-black softening with hemorrhage, and we thus find the scirrhous submucous cellular tissue invested by a thin, gauze-like black remnant of the mucous membrane, or it is quite denuded, merely retaining here and there a few solitary black convolutions of vessels at its surface."

"The scirrhous, too, at once becomes the seat of various metamorphoses. It may, after it has been denuded of its mucous membrane, become gangrenous in large patches or in round circumscribed spots, the tissue exfoliating by layers, so as to give rise to deep, smooth excavations in the crude cancer; or it may become developed into a more highly-organized carcinomatous formation, such as medullary sarcoma, accompanied by bleeding fungoid tissue; this is soon destroyed by a suppurative process, leaving an ulcer which is surrounded by an elevated lardaceous margin."

Though these cancerous ulcers are generally a result of softening of scirrhous or encephaloid deposit, yet they may occur in the mucous membrane primarily, and have then caused some doubt as to whether it was a simple chronic ulcer or a cancerous one; but in general the latter may be distinguished by its irregular shape, size, and situation, by its borders which are uneven, infiltrated with cancerous deposit, often fungus and bleeding, as also by its surface, which may be even gangrenous, just like cancerous ulcers on the external parts of the body, and though it may gradually destroy the coats of the stomach, and thus still resemble the perforating ulcer, yet it has much greater tendency to form adhesions with the adjacent viscera, the liver, pancreas, spleen, or transverse colon, and so prevent communication with the peritoneum. It is a curious fact that cancerous ulcer of the stomach seldom, if ever, has the offensive smell which is generally met with in open cancer of other parts, and which is a source of great annoyance and distress to the patients and attendants. It is, probably, prevented by the antiseptic agency of the gastric juice on the surface of the ulcer. Medullary cancer differs from scirrhous chiefly by its rapid and extensive growth, by its tendency to degenerate into vascular fungoid vegetations, and by its facility of extensive dissemination.

A third species of cancer is that in which the parietes are considerably thickened, and in which a section of the morbid part presents no traces of the proper tissue of the stomach, but, instead of it, a number of little cells, intersected by fibrous septa, and containing a glue-like substance; whence it has received the names of colloid, or gum-cancer, or areolar, as the natural structure of the part is transformed into a fibrous areolar framework, filled by a transparent jelly. When the disease is far advanced, all traces of organization disappear, there is no vestige of vessels, and all the different structures are reduced to one uniform morbid type, the stomach preserves its shape, but is generally greatly increased in thickness; ulceration, which occurs so frequently in other forms of cancer, is seldom seen in this, for it is rather a successive destruction of parts, layer by layer, without any appearance of vascularity in the subjacent structures. This form of cancer is found most frequently at the pyloric orifice of the stomach, but does not confine itself to that part, as was well exemplified in two cases which I exhibited at the Dublin Pathological Society. In one, that of a man, half of the stomach was engaged, and in the other case nearly the whole of it was destroyed. The coats of the stomach are sometimes thickened to the depth of two or three inches, while its cavity is proportionally diminished, so as to appear only the size of a small intestine when opened into, for it preserves its external appearance, the morbid deposit being gradually laid down, as it were, in its framework. In some cases it presents a rough appearance externally, being covered with irregular tumours, which project underneath the serous membrane, and appear to be developed in the lymphatic vessels, while, internally, the mucous membrane appears converted into soft spongy vegetations, semi-transparent, and composed of fine cells filled with gelatinous material. The diseased part sometimes extends gradually into the surrounding mucous membrane, which is generally well defined, with an elevated border, and here the vegetations are large and prominent, while towards the centre they appear as if flattened, and gradually disappear. They are composed of the mucous papillæ greatly developed at first, but which are eventually destroyed, though without any of the usual phenomena of ulceration; there is no change of colour, nor increased vascularity; it appears more like a change which had taken place in some inorganic body by some new mechanical process, than the result of any vital action. Dr. Hodgkin has described another variety of this form of cancer, in which the individual cellules containing the transparent mucus are much more distinct and defined; and may be compared to frogs' spawn without the black spots, or to small grains of sago boiled to transparency, thickly sprinkled over the greater portion of the mucous membrane, which is not so remarkably thickened as in cases belonging to the preceding variety. One anatomical peculiarity in these two forms of colloid cancer is, that the orifices are seldom completely obstructed, even though the morbid deposit be very great.

Another anatomical peculiarity, but which is common to the three varieties of cancer, is, that "cancer of the pylorus is accurately bounded by the pyloric ring, and never extends to the duodenum, whereas cancer at the cardia invariably involves a portion of the œsophagus. Dr. Budd states that this "singular circumstance is probably owing, in great measure, to the closeness of the cellular tissue in the duodenum, which must impede the extension of the disease along it. Cancer does not spread readily along a mucous membrane, except it be through the intervention of the submucous cellular tissue, into which the cancerous matter filters; and if cancer of the stomach has generally a greater superficial extent than cancer of the bowel, it is owing to the greater looseness of the cellular tissue in the stomach, which the extensive and rapid variations in its volume require."—*Dublin Hosp. Gaz., Oct.* 1, 1856, *p.* 257.

169.—*The pain after the Application of* DR. FELL'S *Caustic.*—There is a woman now in the Cancer Hospital at Brompton, named Louisa Brown, who states that she left the Middlesex Hospital about eight weeks ago, having been there seven weeks in Stafford Ward, during which time Dr. Fell had many women in the same ward upon whom he applied his caustics almost daily. So far from these applications being painless, as some have asserted, Louisa Brown states that the screams and cries of the women were so dreadful, and their moaning at night so heart-rending, that she could not bear to stay in the Hospital, and left on that account. She says that the first applications are not very painful, but that the "dreadful pains" began two or three hours afterwards, and lasted throughout the three weeks or more occupied in the removal of the diseased part. Some women suffered more than others, but all to a very great degree. Vomiting was also very troublesome. Many women had two and three composing draughts in the course of each night, but still the pain was very severe. We may add that this account is corroborated by the statement of a lady we have seen in private practice who was under Dr. Fell's care.—*Med. Times and Gazette, April* 25, 1857, *p.* 410.

170.—EXPERIMENTS ON THE POISONOUS PROPERTIES OF NICOTINE AND STRYCHNINE.

By PROFESSOR HAUGHTON, F.T.C.D.

[At a meeting of the Royal Irish Academy, held on Saturday evening, November 29, after the private business of the Academy was transacted, Professor Haughton, read the following account of some experiments on the poisonous properties of nicotine and strychnine.]

I was induced to make the experiments which I now bring under the notice of the Academy, by the consideration of the specific actions of strychnine and nicotine upon the muscular system, which appeared to be so opposite in their character as to lead me to a conviction that they might prove to be, mutually, antidotes to each other's action. It is generally believed that strychnine exerts a specific action upon the lower or lumbar portions of the spinal column, exciting the muscular system (at least the voluntary muscles) into a state of tetanic contraction, and ultimately producing death indirectly, by rendering respiration mechanically impossible, by virtue of the permanent contraction of the pectoral muscles; and not, as was once supposed, by its action upon the heart. It is also well known that the most powerful agent we possess for relaxing the action of the muscles is nicotine, whether administered in the form of tobacco smoke or infusion of the leaves. From these well known facts I was led to believe that these powerful poisons might be used as antidotes to each other's action, and with the view of testing this conjecture, I made the following experiments:—

First Experiment—Nicotine.—A bath, consisting of 5℥ of water, holding dissolved 5grs. of nicotine of sp. gr. 1012 was prepared, and in this mixture a frog was immersed; in fifty-six seconds the animal became narcotized and apparently incapable of motion, but on being excited and stirred it was evident that life was not extinct, and the pulsation of the heart did not cease until twenty-three minutes after immersion. The anterior extremities became paralyzed first, accompanied with a quivering of the fore legs, and then the hind legs were drawn up so as to reduce the animal to the smallest possible compass. At the time of death the belly and hind legs became suffused with a pink tint, which was rapidly diffused, commencing at the thighs. After death the mouth remained closed, and the eye continued very brilliant and life-like, the pupil being apparently dilated.

Second Experiment—Nicotine.—A solution of nicotine was formed, consisting of 5grs. of nicotine to 20℥ of water, and a frog immersed as before, leaving his head above the water; in three minutes and a half he became quite paralyzed as before, placing the fore legs upon his back with the palms upwards. Death finally ensued in forty-three minutes, with the same appearances as those described in the first experiment.

Third Experiment.—Strychnine.—In this experiment 5 grs. of pure strychnine were dissolved in a minimum of muriatic acid, and 5℥ of water; a frog was placed in the bath thus formed, with the following results:—tetanic convulsions set in immediately upon his touching the liquid, and continued while life remained; there was no signs of opisthotonos, but strongly marked emprosthotonos. The animal was quite dead in four minutes, mouth open, and eye closed and death-like; the whole body stretched out and bent forwards, the back being highly arched.

Fourth Experiment.—Strychnine.—A bath was made of 5 grs. of strychnine and 20℥ of water, and a frog placed in the solution as before. The animal became speedily convulsed, and exhibited the symptoms as in the former case; but in this case death did not finally take place until after an interval of fifty-five minutes. The mouth was open, the eye closed, and the body arched, and bent forward as before.

Fifth Experiment.—Nicotine and Strychnine.—In this experiment two baths were prepared, one of 5 grs. of strychnine to 5℥ water, and the other of 5 grs. of nicotine to 5℥ of water, and the two solutions carefully mixed together. A frog was now introduced and remained apparently without inconvenience for nineteen minutes when the strychnine began to operate, and then first tetanic convulsions appeared; the usual appearances of strychnine poisoning continued, but with less violence than in the former experiments. After forty-seven minutes the animal was removed from the bath and washed with cold water; he lived afterwards for upwards of twenty-four hours, exhibiting at intervals tetanic convulsions.

Sixth Experiment.—Nicotine and Strychnine.—Another frog was placed in a mixed bath of nicotine and strychnine of the same strength as that last described, and removed after an interval of ten minutes; after removal in thirty-two minutes, the first symptom of emprosthotonos appeared, and the convulsions continued for many hours, but the animal ultimately recovered completely, and is still in the enjoyment of health, after the lapse of many days.

The last two experiments appear to me conclusive as to the action of nicotine in retarding and, in certain cases, completely counteracting the effects of strychnine.

In the fifth experiment a frog had lived for forty-seven minutes in a mixture of two solutions, of which one would have destroyed life in four minutes, and the other would have produced paralysis in one minute, and destroyed life in 23 minutes, and yet, in the mixture, the animal lived forty-seven minutes, and afterwards for twenty-four hours. In the sixth experiment, the frog immersed in a similar mixture of the poisons for ten minutes had ultimately recovered, the effect of the strychnine being completely obviated by the action of the nicotine. I consider that these facts, which have come under my notice, give rise to much interesting speculation, into which, however, I have no desire to enter, as I prefer leaving such topics to those who are more immediately concerned in them. I hope that further inquiries will be instituted into the action of strychnine and nicotine upon some of the warm-blooded animals, as I believe that in nicotine, which is always easily procurable in the form of tobacco leaf infusion, will be found a valuable antidote in at least some cases of strychnine poisoning, whether intentional or accidental.—*Dublin Hospital Gazette, Dec.* 8, 1856, *p.* 342.

171.—CASE OF POISONING FROM THE APPLICATION OF BELLADONNA PLASTER TO THE SKIN.

By Dr. William Jenner, Physician to University College Hospital.

Mr. Th., having suffered for some time from pain in the back, palpitation, and dyspeptic symptoms, consulted on October 4 a physician, who prescribed nitro-muriatic acid, and a belladonna plaster, 9 inches by 6 inches, for the back. The plaster produced a crop of pustules, though the patient was not aware of it.

At 10 a.m., October 14, he removed the old plaster, and applied on the same part, now the seat of the pustules and of a few minute ulcers, a new one of like size. At this time he felt particularly well. Soon after ten he left home. Between eleven and twelve, while in the city, he noticed that his tongue and throat were extremely dry, and that his tongue was covered with a white, clammy fur, which he could pull off in strings. The sense of dryness and discomfort of the tongue and throat were most distressing, and such as to impede articulation. At the same time he was affected with extreme desire to micturate, though he could pass only a few drops of perfectly colourless urine. From this time till he lost consciousness his desire to pass urine was constant; wherever he could retire he did so, but succeeded in expelling from the bladder, with considerable effort, only a few drops of colourless fluid. The sense of dryness of the tongue and throat continued to increase, and he soon began to feel a little confused in his head, so that he was fearful people would think he had been drinking. He transacted all his business correctly, though at his office, where he was between two and three o'clock, it was observed that there was something strange in his manner and speech. Here he drank some water, which seemed even to increase his sense of dryness of the tongue. He drove himself home, which he reached about three o'clock. His mind, by this time, was a good deal confused, and, feeling himself unable to pay his men, he placed the money he had just drawn from the Bank in safety in his own room. Soon after he had, five or six times in quick succession, convulsive catchings of the extremities, face, and trunk, such, he says, as animals have when bitten by venomous serpents; then his mind began to ramble, and his ordinary medical attendant, Mr. Knaggs, of Kentish-town, was sent for. When Mr. Knaggs arrived, Mr. Th. was very delirious, but still recognized him.

I saw the patient about six p.m., at Mr. Knaggs' request. We found Mr. Th. much worse than when Mr. Knaggs had left him. He was standing by the bedside, supported by two men; he seemed to exercise very little control over the lower extremities, and to have very little power in them. It was clear that he must have fallen to the ground had he been left without support. He leaned a little to the right, as though the right side were weaker than the left; but then those about him told us that shortly before he had inclined to the left side. He was led, at my request, to the opposite side of the room, both legs dragged, but neither one more than the other. He was restless in the extreme, and would not lie down for an instant; his hands were in constant motion, he seemed as if he were busy moving some light objects. Occasionally, he raised his feet alternately some distance from the ground, as one does in ascending stairs. He moved his mouth incessantly, evidently with the idea that he was talking; but the sounds that he uttered were inarticulate, and altogether unintelligible. He paid no attention to those about him; in fact, seemed unconscious of their presence, only now and then, when addressed in a loud voice, he stared at the speaker for an instant, like one suddenly aroused from a sound sleep. Once he laughed, when bid to put out his tongue, and in the most rapid manner protruded it, and then as quickly withdrew it. There was a little deviation of the face to the left, though not more than is natural to many adults, and is, I think, proper to Mr. Th. The pupils were very large; when the candle approached them, they acted equally, but imperfectly and sluggishly. The head was warm, but not warmer than the surface generally; the face was a little flushed. There was no throbbing of the vessels of the neck or head.

The pulse was between 80 and 90, and regular. The heart's action was tolerably strong; the left ventricle was hypertrophied, and a loud, double, endocardial murmur was heard at the base.

The history of the symptoms before Mr. Knaggs saw the patient was only obtained from him after his complete recovery, and so some doubt was at first entertained as to the nature of the case. Still, as the symptoms agreed with no disease of the brain or meninges with which I was acquainted, while the majority were such as occur in poisoning with belladonna, we thought it highly probable that they were due to absorption of belladonna by the skin. The plaster was accordingly removed at once, and the surface greased and washed, and clean linen put on, some of the belladonna having passed on to the shirt. A blister was applied to the back of the neck, and an aperient, with five grains of sesquicarbonate of ammonia, directed to be given every two hours. The first dose of the ammonia produced such decided improvement, that Mr. Knaggs gave a second dose in half-an-hour; this was followed almost instantly by perfect consciousness.

The next morning Mr. Th. was able to arrange his accounts, though he had not slept for an instant. He had no sleep the following night, and his memory for two or three days was very defective. He does not remember anything that passed between Mr. Knaggs' first visit (and even of that he has only a dim recollection), and his return to consciousness, about 10½ or 11, p.m. He is now quite well, with the exception of slight dimness of vision, and dilatation of the pupils, and a consciousness of a little impairment of memory. There does not seem to have been any eruption on the skin, excepting the pustules, nor any itching on the surface.

I am induced to publish the case, first, because cases of poisoning with belladonna occur but rarely, and it is, therefore, desirable that the symptoms noted in particular cases should be recorded; and, secondly, because of the practical bearing of the case in regard of the caution it enforces as to the repeated application of belladonna plasters to the same surface.—*Med. Times and Gazette, Nov.* 22, 1856, *p.* 513.

172.—TESTS FOR STRYCHNINE.

By D. Lindo, Esq., Jamaica.

It is known that peroxide of lead, peroxide of manganese, and chromate of potassa, will each of them produce a red colour when added to a mixture of strychnine and sulphuric acid. I am not aware of any attempt having been made to explain this fact.

The results obtained in my experiments seem to favour an opinion I have formed on the subject. I consider that the red colour produced by these three tests is in every instance referrible to the same cause, namely, the separation of hydrogen from the strychnine; that, when the metallic peroxides are used, they are converted into protoxides, which combine with sulphuric acid when the chromate of potassa is employed; that the chromic acid is converted into oxide of chrome, which combines with sulphuric acid; and that the oxygen liberated in each case takes hydrogen from the strychnine, forming water, the reaction being partly induced by the affinity of sulphuric acid for water.

I tried the following experiments, thinking that the red colour might be produced in other instances where strychnine, in contact with concentrated sulphuric acid, was freely supplied with oxygen in the nascent state.

1. One-eighth of a grain of strychnine was mixed with sufficient distilled water to form a paste, and this mixture was subjected to the influence of a galvanic current derived from a battery composed of fourteen pairs of four-inch plates. Water was decomposed, but apparently no other reaction took place until a drop of concentrated sulphuric acid was added, when a deep ruddy tint was instantly developed at the *positive pole.*

2. One-sixteenth of a grain of strychnine, moistened with a little distilled water, was intimately mixed with about the same quantity of chlorate of potassa. A beautiful red colour was produced by adding sulphuric acid to this mixture.

3. The same effect was produced by adding sulphuric acid to a mixture of strychnine and chlorate of baryta. Sulphuric acid, combining with the potassa and baryta, liberates chloric acid, which is immediately resolved into chlorous acid and oxygen. The former escapes as gas; and the latter, if my view is correct, combines with hydrogen derived from the strychnine to form water.

4. All the nitrates tried produced a similar effect; but the results obtained from them might in a measure have been antitcipated, without reference to my theory, as the strychnine used contained brucia; and it is known that nitric acid produces a red colour with this base.—*Association Med. Journal, Nov.* 8. 1856, *p.* 966.

173.—*On the Effects of the Tincture of Iodine applied locally on the Mucous and Serous Membranes, in relation to Pain.* By Dr. BOINET.—Dr. Boinet remarks that the contact of tincture of iodine with the mucous membranes is not at all painful; and that it is possible to paint, almost without the consciousness of the patients, the pharyngeal and buccal mucous membranes, the tonsils, the neck of the uterus, the vagina. &c., without causing any pain: on condition, however, of not allowing the tincture to touch the orifices of the mucous cavities—namely, the points where the mucous membrane terminates and the skin commences; for the pain is very severe, and is prolonged for a considerable time, whether the tincture is applied to the lips, the anal orifice, or the female external parts of generation. In these cases the patients experience a pain as intense as when the tincture of iodine is applied to the skin denuded of its epithelium, or to a recent wound. There is the same pain when the ocular or palpebral conjunctiva is touched for the treatment of certain inflammations of the eye, the removal of granulations, &c. If several successive paintings take place, the same change ensues on the mucous membranes as on the skin—namely, that desquamation having taken place, the pain becomes then very severe after the subsequent application. As to the serous membranes, the tincture of iodine always produces in them very severe and cutting pains, and in an instantaneous manner. But this pain is much less severe upon the articular membranes than on the peritoneum. The acute pain produced by the contact of the tincture of iodine with the peritoneum is, in fact, a certain sign which indicates that an ascites has been mistaken for an ovarian dropsy; inasmuch as, in the latter affection, the iodine injection is never painful. This pain is also a proof, when it arises with less intensity in injecting an ovarian cyst, that a certain quantity has penetrated into the peritoneum.—*British and For. Med.-Chir. Review, Jan.* 1857, *p.* 258.

174.—ON THE VAPOUR OF AMYLENE.

By Dr. JOHN SNOW. (Read before the Medical Society of London.)

[The author commenced by detailing the time and mode of the discovery of amylene, which is a colourless and very mobile liquid of extremely low specific gravity. It is composed of ten atoms carbon and ten hydrogen.]

It had an odour somewhat resembling naphtha; some persons thought the odour agreeable, and some thought it unpleasant; the odour was not so strong or permanent as that of sulphuric ether, and it did not remain long in the patient's breath. The vapour of amylene was much less pungent than those of ether and chloroform, and, therefore, it was much easier to breathe, and had not caused coughing, except a little in two patients with catarrh. He was not aware of the existence of amylene till a few months ago, or he should have tried it sooner; for, judging from experiments which he had made on analogous substances, there could be no doubt of its causing insensibility when inhaled; but he could not tell, without trial, whether it might not be too powerful, otherwise objectionable, in its action. He made several experiments on small animals with amylene, and after inhaling small quantities of it himself, he administered it in King's College Hospital, commencing with cases of tooth-drawing, on Nov. 10, 1856, and he had more recently given it in the larger surgical operations. He found, from experiments on animals, that to induce a very complete state of coma, which he called the fourth degree of narcotism, it required that a fifth part as much amylene should be absorbed as the blood was capable of dissolving. To cause the second degree, or that state in which consciousness and volition were disordered, but not abolished, it required a tenth part as much as the blood would dissolve, whilst to induce the third degree of narcotism, which was as far as he had found it necessary to carry the effect in the human subject, it required an intermediate quantity, or about fifteen per cent. In the case of chloroform, ether, and several allied substances, the proportion which required to be absorbed, was far less, being only, for the fourth degree of narcotism, about one-twenty-eighth part as much as the blood was capable of dissolving. Benzin, which was a simple carbo-hydrogen, like amylene, was intermediate between this and the above substances in the relative amount of it which was absorbed, one-seventeenth part as much as the blood would dissolve being required to induce the fourth degree of narcotism. Whilst the relative amount of amylene absorbed was high, the actual amount was extremely small, owing to its very sparing solubility in the serum of the blood and other watery fluids. He calculated that in the adult human subject the amount of amylene circulating in the system, in the third degree of narcotism, was less than three minims. Viewed in the light of the small quantity which required to be absorbed to cause insensibility, amylene was a very powerful agent, but when considered in relation to the quantity which was consumed during inhalation to the usual way, it was very far from being powerful. This arose from the great tension and the small solubility of the vapour, in consequence of which it was, with the exception of a small fraction, expelled from the lungs again without being absorbed. It took from three to four fluid drachms of amylene to cause insensibility in the adult, whilst less than a drachm of chloroform was usually sufficient. The quantity of sulphuric ether required to cause insensibility in the adult was eight to ten fluid drachms, one-half of which was absorbed into the blood. In a protracted operation the quantity of amylene used was greater than that of sulphuric ether, as the small quantity of the former which was absorbed was quickly exhaled again from the lungs, and required to be constantly replaced, whilst the large amount of sulphuric ether, when once absorbed, took a much longer time to evaporate in the breath. It was necessary for the patient to breathe air containing not less than fifteen per cent. of vapour of amylene, in order to reach the third degree of narcotism, or that condition in which consciousness and voluntary motion are entirely suspended, the pupils being usually contracted and turned upwards, but the muscular system not necessarily relaxed. The patient must inhale the amylene at the rate of rather more than a fluid drachm a minute; in this way he becomes insensible in three minutes or rather less; but if the vapour was not inhaled in a sufficient volume, he would not become insensible by continuing the inhalation, for however a long time; the quantity of vapour must be increased, or it would not succeed. He had administered the amylene in his ordinary chloroform inhaler, which he had, however, got somewhat enlarged. In the use of amylene, absence of pain had been obtained with less profound coma than usually accompanied the employment of chloroform and ether. There were some cases, indeed, in which the minor parts of an operation, under these latter agents, might be performed without pain, whilst the patient was in a semi-conscious state, or even altogether conscious, but they formed the exception, whilst in the use of amylene, the patient had very often been partially conscious during the operation. In a case that day in which Mr. Fergusson removed a large melanotic tumour from the groin, the man repeated some verses very accurately whilst the arteries were tied, and was awake and talking to the bystanders whilst the wound was being stitched up, but felt nothing of it. The pulse was increased in frequency and force during the inhalation of amylene to a greater extent than happened with chloroform; the respiration also was very often accelerated, about as often as in the inhalation of ether, and more frequently than with chloroform. There had not been much increase of saliva from the use of amylene, and he (Dr. Snow) had not yet met with the profuse flow of saliva which was often troublesome in the employment of chloroform and ether. There had been no sickness in any of the twenty-one operations in which he had exhibited the amylene, nor any of the depression which so often preceded and accompanied the sickness from chloroform and ether; and there had been hardly any struggling or rigidity in any of the patients, although several of them being robust men, a good deal of both might have been expected before complete insensibility, if chloroform had been the agent employed. He was of opinion that amylene would be perfectly safe with careful management. Sulphuric ether seemed to be perfectly safe in whatever way it was used; although it had been blamed for causing death, no fatal accident seemed to have been really occasioned by it. This arose from the circumstance that the dose of ether occupied so much space in the form of vapour, that it could not enter the system except by degrees, and its effects were necessarily produced gradually. In regard to chloroform, however, even a fatal dose occupied but a very small space in the form of vapour, and unless great care were taken to have it largely diluted with air, it might act with dangerous rapidity, and the point of safety might easily be overstepped. The quantity of amylene which required to be inhaled, occupied in the form of vapour, a volume intermediate between that of the vapour of chloroform and that of ether, and in all the ordinary methods of inhalation it must become mixed with a large portion of air. The relative advantages of amylene might be summed up as follows:—In regard to its odour, it was more objectionable than chloroform, but much less so than sulphuric ether. In the amount which sufficed to induce insensibility, it was also intermediate between these two agents. In regard to its pungency, it had a great advantage over both ether and chloroform, being much less pungent than either of them; on this account the patient could always begin to inhale the amylene of full strength within half a minute, and the operation might generally be commenced within three minutes. It had an advantage in preventing pain with a less deep stupor than was occasioned by the other agents, and in the ready waking and recovery of the patient, it had an advantage over chloroform, and a still greater advantage over ether. The almost entire absence of struggling and rigidity in the use of amylene is another advantage it possesses; and the greatest advantage of all, if it should continue to be met with, is the absence of sickness from its use.—*Lancet, Jan.* 17, 1857, *p.* 63.

175.—*Employment of Amylene for Children.* M. GIRALDS, as the result of the employment of amylene in place of chloroform in the cases of 25 children of different ages, draws the following conclusions:—1. It is respired more easily, and with less struggling than chloroform. 2. Anæsthesia takes place very rapidly. 3. The sleep is more calm and natural, and is unaccompanied by stertor. 4. The patients rapidly return to their normal conditions. 5. It does not induce nausea, vomiting, or cerebral congestion. 6. The patients suffer no inconvenience afterwards, recovering all their cheerfulness.—*Med. Times and Gazette, April* 4, 1857, *p.* 345.

176.—ON THE EFFECT OF CHLOROFORM UPON THE RESULT OF SURGICAL OPERATIONS.

By Dr. JAMES ARNOTT.

[Scarcely a hundred instances of sudden death from chloroform have as yet been reported, but we can scarcely doubt that a far greater number have been concealed; but, besides this number, many die within a few hours of its administration, whose deaths have been attributed to other causes. Dr. Mouat, in speaking of soldiers who were operated upon in the Crimea under chloroform, says, that it induces nausea and depression, reaction is never thoroughly established, and the patient frequently dies from exhaustion, in from twelve to twenty-four hours. "Many of these," he says, "may be fairly termed 'deaths from chloroform,' but are never so returned." The most extensive statistical investigations which have been published on this point, are by Dr. Simpson of Edinburgh. From these tables, it appears, that the mortality from amputations immediately before the introduction of chloroform was 29 per cent., and after its introduction only 23 per cent.; but these tables, when closely examined, are found to involve the greatest fallacies.]

The first, which professes to give the average mortality of thirty British Hospitals, should have shown the number of operations, and their results, at each of these hospitals during precisely the same period of time; but, instead of this, while the period of observation, as respects the only large healthy hospital inserted in the list, is limited to two years, that of the large unhealthy hospitals of Edinburgh and Glasgow, the excessive mortality of which almost equals that of the Paris hospitals, extends to more than three times this duration. If an equal period of observation be taken to form this average, (excluding two of the small hospitals, one healthy and the other unhealthy, on account of the period of observation respecting them being uncertain, the table, instead of showing a mortality of 29 per cent., would show one of only 24; and, if other large healthy hospitals, like that at Bristol had been included—such as the Liverpool Royal Infirmary, where, (as appears from a published return) the deaths from amputation during three consecutive years were only at the rate of 6 per cent.—the average mortality of the whole would probably have been considerably less than 20 per cent.

The second table involves no miscalculation so palpable as that in the first, but it leads to conclusions equally erroneous. It gives an account of the number of amputations in which ether was administered, with the results; but what the character of the cases was in which it was used—whether the patients were healthy or worn out with disease—we have no means of judging. In all probability the best cases were generally selected, for only a few were returned from each hospital; and it was natural and proper that at first the best cases should be chosen for trial; not only those free from serious organic disease of the vital parts (a class which were long excluded,) but those in which the reparative powers were most conspicuous; and a clearer proof that this was the case cannot be adduced than the fact that the etherized cases from the eight London hospitals inserted in this list, show a mortality of more than 10 per cent below that which (as we shall presently see) exists at the present day.

But as the prospect of recovery from amputation is good or bad according to the general health of the patient, and other circumstances, if we could always select our cases, the usual mortality would probably be reduced to less than a half. As it is, all the advantage which the 302 etherized cases appear by the table to have over the non-etherized 618 of the other table (admitting the returns to be correct), does not amount to more than 1 per cent. To prove that there was not actually a loss of life, instead of a gain, from etherization, there should have been, assuming that the cases were generally selected, a much greater difference than this. A percentage of 23 deaths from amputation in the English provincial hospitals, even supposing that every case was etherized, would indicate a great increase of the usual rate of mortality before the introduction of etherization.

Another objection to the reception of this table as an argument in favour of the indiscriminate use of chloroform, is, that it has reference principally to sulphuric ether as the means of producing anæsthesia, for very few operations had been performed under chloroform at the time of its publication. Now, chloroform, whatever other advantages it may possess over ether, has none as regards safety; and, what is of more importance in respect to this table, it has of late years been employed much more boldly than was formerly usual. Patients were then frequently only half intoxicated by the anæsthetic, and the intoxication was kept up but for a short time. A change in this practice had not yet been effected by the singular argument, that, because a patient labouring under convulsions may be kept for a long time under the full influence of chloroform apparently without injury, the same proceeding can be adopted with impunity in the case of a patient exposed to the long-continued danger of a large amputation wound.

We shall now proceed to the consideration of tables of a very different character from the above, as respects their construction, and which disclose facts of a very different import.

Although I had long felt convinced, from reflecting on the evidently poisonous character of chloroform, that the number of sudden deaths produced by it, whether reported or not reported, was by no means the measure of the whole mortality, I was unable to obtain satisfactory evidence of this. It was by statistics alone that this point could be determined, and I had no easy access to the repertories of the necessary facts preserved in hospitals. At last, my attention was directed to the Statistical Reports of Operations which have appeared for several years past in the 'Medical Times and Gazette,' by a reference to them in Sir Benjamin Brodie's recently-published paper on Lithotrity. On examination, I found that these reports were all I could have desired. A monthly account is given of the whole of the operations during the last three years. Their accuracy is assured by the circumstantiality with which every case is mentioned, and by the fact, that they were not drawn up with a view to the settlement of any particular question in practice. The reporters of these statistics have been under no conceivable bias; they have been actuated solely by a desire to promote surgical science. If their returns have a fault, it is certainly not the overstatement of the mortality; for, almost every month, a large number of cases are mentioned as being still under treatment; and although the fatal issue of a few of these is afterwards reported, it is probable that other deaths have happened in consequence of the operation, but at too long a period after it to be known to the reporter or to be recorded by him. It might at first sight appear desirable to have reports for a longer period than three years, but were the period now extended, any such comparison as that we are now making between the results of operations, becomes imperfect or impossible by the advancing improvements altering the circumstances.

In the 'Medical Times and Gazette' there are separate statistical reports both of the London and Provincial Hospitals; but I shall restrict my attention to the first, for the following reasons. The principal is, that the hospitals in the provinces are too far apart, and differ from each other in too many circumstances, such as climate, site, and character of the patients frequenting them, to render it possible to form an estimate of their average mortality before etherization was introduced, from the very few published returns of the results of amputations in the Provincial Hospitals at that time. Another reason is that I am not sure that the administration of chloroform has been so universal in operations in the country as it has been for many years past in the metropolis. In London, on the other hand, there are many large hospitals furnishing the requisite number of facts, and they are all under nearly the same kind of general management, surgical practice, &c. We have authentic returns also of the mortality after amputations in some of the large London Hospitals before ether was introduced, from which, in consequence of the similarity of circumstances just alluded to, we can construct a sufficiently correct estimate of the general mortality for comparison with the present rate. The following table has been constructed from these returns.

TABLE I.

Showing the Average Mortality after Amputations in the Thigh, Leg, and Arm, in four London Hospitals before the Introduction of Chloroform.

Hospitals.	Date of Observation.	Reporter.	Primary Amputations.		Secondary Amputations.		Total.	
			Cases.	Deaths	Cases.	Deaths	Cases.	Deaths
University College	1835—40	Mr. Potter.	8	3	50	7	58	10
St. Thomas's ...	1842—47	Mr. Smith.	20	7	29	6	49	13
University College	1841—46	Mr. Cadge.	7	4	38	10	45	14
Bartholomew's . .	1846	Mr. Haig.	8	1	14	3	22	4
							174	41

The great diversity which appears in the above Table between the two equal periods of observation at University College Hospital, is a striking illustration of what has been termed a run of good or bad luck in the practice of the same surgeon, for Mr. Liston was the principal operator at the Hospital during both periods; and it shows, also, how unsafe it would be, unless for a very long period, to rely on any particular Hospital as a standard. The return of deaths from amputations at St. Thomas's is heavy, and I might have been justified in rejecting it as being of too private a nature to have the requisite authority; but, in order to prevent any cavil, or appearance of selection, it is retained; and, for the same reason I have omitted the only other return of amputations which I have been able to find, as respects the London Hospitals: objection may be made to it, because the mortality is much below the usual average. This return is from Guy's Hospital, and is mentioned by Dr. Fenwick in his elaborate paper on the statistics of amputation, in the 'Edinb. Journ. of Med. Science' for 1847. The period of observation is from 1843 to 1845; the cases are 36, and the deaths 4, or at the rate of 11 per cent. Were this return added to the others in the table, it would reduce the average of the London mortality to less than 20 per cent, or one fatal result in five amputations.

The present mortality of the London Hospitals is shown by the following Tables, into which the several returns in the 'Med. Times and Gazette' have been condensed.

TABLE II.

Showing the Mortality from Amputation of the Thigh, Leg, and Arm, performed under Chloroform in the London Hospitals during Eighteen Months, from June, 1855, *to June,* 1856, *inclusive.*

Hospitals.	Primary Amputations		Secondary Amputation.		Total.	
	Cases.	Deaths	Cases.	Deaths	Cases.	Deaths
St. Bartholomew's	1	...	23	7	24	7
St. Thomas's	4	3	12	3	16	6
Guy's	15	10	34	3	49	13
London....................	11	2	13	4	24	6
St. George's	6	3	15	5	21	8
University College	3	2	14	3	17	5
King's College	1	1	8	3	9	4
Middlesex	1	1	5	2	6	3
St. Mary's	5	3	12	3	17	6
Westminster	...	...	2	...	2	...
Charing-Cross	1	1	9	2	10	3
Metropolitan Free	...	...	2	...	2	...
Hosp. for Sick Children	...	...	1	...	1	...
Seamen's	...	...	5	...	5	...
Marylebone Infirmary...	...	...	1	...	1	...
Total...........	48	26	156	35	204	61

TABLE III.

Showing the Mortality from Amputation of the Thigh, Leg, and Arm, performed under Chloroform in the London Hospitals, during Three Years, from July, 1853, *to June,* 1856.

	Number of Cases.	Number of Deaths.
First Year	144	57
Second Year	150	50
Third Year	136	41
Total	430	148

It appears, by comparing these with the foregoing Table, that the mortality in the London Hospitals has increased since the introduction of etherization from 21 to 34 per cent., or, to vary the expression, instead of amputation being fatal in a less proportion than one in four of those operated upon, it now proves fatal in one in 3. Is not so enormous a sacrifice of life too high a price to be paid for anæsthesia, even granting that this cannot be otherwise obtained with perfect safety? Is life to be held as nothing when compared to pain?—*Med. Times and Gazette, Oct.* 25, 1856, *p.* 412.

177.—*Death from Chloroform.*—[In a case which occurred at St. Thomas's Hospital, and which caused great excitement, the following were the opinions of the medical gentleman examined by the coroner, as to the propriety of giving it in such a case, the man being in delirium tremens.]

Mr. Solly saw the patient the day previous to the operation, and he thought him a healthy subject. Mr. Simon also agreed generally in this opinion. Mr. Simon was under an impression that the death was epileptic in the present instance, and as no person could, in the usual routine of hospital practice, discriminate such patients, he believed every thing that was right had been done. As regards *delirium tremens,* Mr. Simon believes we want facts; but its striking analogy to some of the worst forms of epileptic and hysteric seizures would make him cautious. Mr. Paget conceives the existence of *delirium tremens* to be a very strong contraindication to the use of chloroform—indeed one of the strongest. Mr. Solly, on the opposite hand, agrees with Dr. Snow; and as chloroform is a cure for *delirium* *tremens*, he would not be afraid to give it to such cases. That drunkards require more chloroform is the experience of Guy's Hospital; and hence *delirium tremens* patients may get an overdose, or the cumulative dose may kill when least expected—may strike more suddenly on some internal organ. This practical remark is due to Mr. Callaway. Dr. Black is inclined still to believe that patients are asphyxiated in chloroform, as if in carbonic acid; and, as drunken patients, or those under delirium tremens, are too often impassive to surrounding circumstances, they may get an overdose without making the usual resistance.—*Asso. Med. Jour., Oct.* 25, 1856, *p.* 903.

178.—*Simple Method of Preventing Accidents from Chloroform.*—[The following plan is recommended by a correspondent of the 'Medical Times and Gazette' as one which the author has found uniformly successful both in midwifery and surgical cases. He says]

Although I have used it at least one thousand times, I have never seen the least bad consequences follow from it, and I consider that this success depends greatly on the precaution I take before administering the chloroform; this simply consists in administering a glass of spirits of wine,—I prefer the former, even to ladies. The wine, or spirits, seem to exercise no effect on the chloroform, while their stimulating quality keeps up the action of the heart during the time the patient is under chloroform, and prevents sinking. I had occasion some years ago to perform a slight surgical operation on a lady who was fearfully afflicted with asthma and excessively nervous. Her husband being a medical man, now in the west-end of London, objected to the use of chloroform in such a case, but I assured him that the wine would prevent any evil happening. The operation was performed. the patient saved from the pain of it, and to her great relief she had no return of asthma for a long time, and when it did return, she had recourse to the chloroform, which, for a time, gave her great relief. On one occasion, while I was removing a scirrhous tumour, the patient, who was rather advanced in life, got an overdose of chloroform, and we had great fears of her being permanently roused, and I do believe her recovery was owing entirely to injecting a glass of brandy-and-water into the rectum. The accident happened owing to the gentleman who had charge of the chloroform getting so interested in the dissection, that he forgot to raise the towel off her face till respiration had become imperceptible. However she soon rallied.—*Med. Times and Gazette, Dec.* 27, 1856, *p.* 652.

179.—ON THE ANTI-HÆMORRHAGIC ACTION OF CHLOROFORM DURING OPERATIONS.

By M. CHASSAIGNAC, Surgeon to the Hospital Laribosiere, &c.

It is impossible for surgeons, who have performed a great number of operations with the assistance of chloroform, not to have been struck by the small quantity of blood lost during severe operations by certain subjects submitted to the action of this anæsthetic. It is for my part a remark that I have made a long time back. Without otherwise attaching importance to this particularity, I have not been able to prevent myself comparing the smallness of these losses of blood with the extent of those which have taken place during great operations performed without the assistance of chloroform. Reflecting on the mechanism, in virtue of which could be produced such a result, I understood very quickly that a subject in whom the physical and moral excitement caused by an operation accelerated the pulse to 120, ought by an open artery to lose more blood than the one who had only 60 pulsations a minute. I believed that I had found in this fact something very advantageous, and of direct application to practice, with respect to hemorrhages that take place during operations. But to draw conclusions, and, above all, conclusions applicable to practice, something else besides impressions and reasonings, however plausible they might be, was necessary. I resolved, then, to submit to special observation a certain number of patients operated upon at the Hospital St. Antoine. It is the results of these operations which I desire to submit to the attention of surgeons. Eleven subjects, of whom three underwent amputations of the thigh, four of the breast, one of the leg, one an entire resection of the first metatarsal and of the first cuneiform bone, one a resection of the humerus, and one of the inferior maxillary bone, have furnished me the occasion to state that, whether in the period of collapse or in the period of anæsthetic tolerance, the losses of blood which constantly attend similar operations were enormously lessened, and that particularly in two cases (an amputation of the breast in a woman, and of the thigh in a man) the operation was performed, so to speak, without any loss of blood. In the latter case it is true that the compression of the femoral was made with great exactitude; but that which proved to us that the chloroform had a considerable share in these results was, that when I ordered my assistants to suspend compression, all the surface of the wound, with the exception of the principal artery, which furnished a very moderate jet, gave but a very inconsiderable quantity of blood, and that we were obliged to wait for the cessation of the anæsthetic state to render possible the ligature of the secondary arteries. As to the patient with the amputation of the breast, who was a little more than twenty years of age, and had come to be operated upon for an adenoid tumour of the right breast, there did not literally flow a teaspoonful of blood during the operation. I was wrong here in not waiting for the awakening of the patient before proceeding to the dressing, and it is worth remembering that there happened a hemorrhage which did not show itself until a certain time after the application of the dressing, and several hours after the patient had been taken back to her bed. It is not only with regard to arterial hemorrhages that chloroform can be considered as diminishing loss of blood; it is with respect also to those of a venous character. We know in, fact, that the badly restrained struggles of a patient dispose him in a particular manner to venous hemorrhage; for he is under the influence of two causes which play a considerable part in these sorts of hæmorrhages—first, an imperfect respiration; and secondly, energetic muscular contraction. Chloroform removes these two causes, but only by producing collape or anæsthetic tolerance.

If we wish to render a rational account of the means by which happen the phenomena which occupy us, it will be sufficient to compare briefly the state of a patient operated upon under the ordinary conditions with that of one who has arrived at the period of tolerance. With the first, the fear of the operation about to be performed hurries the pulsations, increases the force of the impulse of the walls of the heart, and retards the free arrival of venous blood, not only in consequence of the impediment brought to respiration, but also by the efforts which the patient makes.

Thus, increase in the number of pulsations, augmentation in their intensity, stagnation of the venous blood, such are the circulatory conditions of the patient who submits to an operation without the employment of anæsthetics.

If these have been administered, what do we see? The pulse is less frequent and less strong, and there is a normal state of the respiration and venous circulation.

In comparing situations thus opposed, it is not difficult to understand the difference of results with regard to the hemorrhagic tendency.

Let us examine now what conclusions we can draw for practice from what has just been laid down. In this respect, and as the result of our observations, we might note—

1st. That the sedative action of chloroform during the period called tolerance diminishes in the patients—

A. The number of pulsations.

B. The force of the impulse of the beats of the heart.

C. The stasis of the blood, the cause of venous hemorrhages.

2nd. That the diminution of hemorrhage during the period of tolerance can render real service in the cases of operations which suppose the possible opening of a great number of vessels.

3rd. That if it is sometimes useful, as has been recommended by some surgeons, not to make the dressing until a certain time after the poeration, this advice becomes, so to say, obligatory after the employment of chloroform, the chances of an ulterior hemorrhage being so much the greater as less blood has been lost during the operation.—*Lancet*, *Feb.* 7, 1857, *p.* 134.

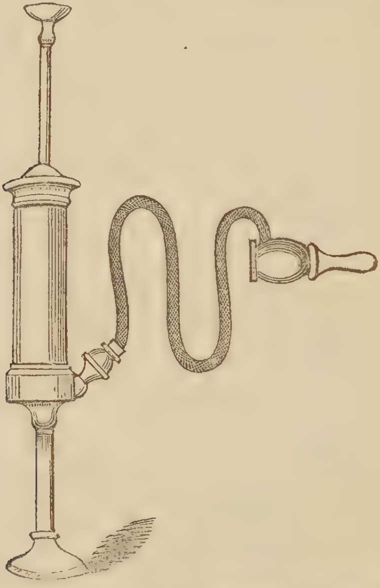
180.—ON THE MEDICINAL EFFECTS OF AMMONIA AND ITS PREPARATIONS.

By Dr. Ogier Ward.

Ammonia has never been considered to be a normal constituent of the blood, as its presence had not been detected except after death in cases of typhus, cholera, melæna, and other diseases of a putrid character, until Dr. Richardson's recent discovery that healthy blood owes its fluidity to the presence of ammonia, which is given off during its coagulation, which process may be arrested. and the fibrine re-dissolved, by the restoration of the alkali. An interesting inquiry here suggests itself: how does the ammonia escape from the body during the coagulation of the blood, and how is it retained in those instances in which the blood remains fluid after death? Assuming the truth of Dr. Richardson's views, the author examined and compared the therapeutic effects of the various preparations of ammonia; and he has found that, whether applied externally or taken inwardly, they possess in common the property of dissolving the proteine elements of the blood, whether in the vessels or effused into the tissues; and thus confirm the experiments of Dr. Richardson. This similarity in the effect of ammoniacal medicines is owing to their ready decomposition, the ammonia being separated, and forming the chief curative agent, though it is aided by the other substances originally combined with it. Thus its stimulant and solvent action is similar in kind, if not in degree, when used either externally or inwardly in the form of gas, liquor ammonia, or combined with carbonic acid, &c. From the utility of these preparations in the treatment of venomous bites and stings, inflammatory swellings, diphtheritis, croup, &c., we may suppose that they will be equally efficacious in urticaria, erithema nodosum, and erysipelas, in which there is an effusion of the fibrinous elements of the blood. In these and other inflammatory diseases and conditions, it is probable that the ammonia is carried out of the system in the form of urea or lithate of ammonia contemporaneously with the increase of fibrine in the blood; and that the benefit of the salts of ammonia in such cases is owing to their preventing or removing the effusion of fibrine from the inflamed parts. In this way, although the primary action of ammonia is stimulant, its remote effects are sedative or debilitant, as it not only arrests inflammatory action, but by its resolvent and secernent power, carries the products of inflammation out of the system, and hence its utility in all active febrile complaints. It is to this attenuating property that its use as an antidote to drunkenness and to the stupor of opium is to be ascribed. Its stimulant powers are of use in poisoning by hydrocyanic acid, in the cold stage of ague, and in the retrocession of gout, rheumatism, and the exanthemata, as well as in syncope, hysteria, epilepsy, and convulsions. The hydrochlorate, which is the least easily decomposed, is probably the most useful of the salts of ammonia, as it not only possesses the stimulant, resolvent, secernent properties of the others, but owing to its combination with chlorine, is endued with tonic powers, by which its prolonged use, unlike that of the other preparations, is attended with invigorating effects both to mind and body; and thus it forms an excellent substitute for mercury in cases where this medicine is inadmissible from its tendency to produce cachexia.—*Lancet, Feb.* 7, 1857, *p.* 145.

181.—SELF-ACTING ENEMA SYRINGE.

This is one of the most useful and at the same time neat instruments employed as a syringe we have seen for a long time; it has been invented and registered by Messrs. Whicker and Blaise, (late Savigny and Co.,) of 67, St. James's-street. It consists of an enema syringe, as represented in the drawing, with a piston rod, which, by the slightest pressure on the top, forces it downwards, throwing up the fluid, and by means of a spiral spring the rod recedes again of its own accord. The very great advantage of this instrument is, that it can be used with one hand with the greatest ease—an object of some moment to invalids or persons in the most delicate state of health. Its construction is so simple, and withal so ingenious and novel, that it is not at



all likely to become deranged or to get out of order. We can very strongly recommend it to the profession and the public for its simplicity and its portable form. We have seen breast-and stomach-pumps on the same self-acting principle, also manufactured by Messrs. Whicker and Blaise, which, together with the enema syringe, can be had in one case. No medical man should be without one.—*Lancet, March* 28, 1857, *p.* 323.

182.—ON THE THERAPEUTICAL APPLICATIONS OF GLYCERINE.

By Dr. W. LAUDER LINDSAY.

Dr. Lindsay used glycerine himself, to the extent of two or three teaspoonfuls daily for several weeks, in order to test its nutrient properties. He found the most palatable mode of using it was when it was mixed with coffee. The result was, a gain of weight to the extent of two pounds at the end of four weeks; and on discontinuing the glycerine, the weight gradually fell. The glycerine is readily miscible with fluids of all kinds. Coffee may be sweetened by it instead of sugar; and if the somewhat peculiar taste which it imparts should be objectionable to fastidious stomachs, a small quantity of sugar may be superadded. It has the characters of a syrup, and does not betray its presence by oil globules or otherwise. It may be added to tea, and it sweetens milk and cream very pleasantly; but its mixture with water is very palatable, and is the readiest and cheapest mode of administration. Dr. Lindsay carefully observed its effects as a nutrient and alterative in eight patients, to whom it was given in doses of two or three tea or table-spoonfuls daily for a month. All the patients before taking it were more or less anæmic, emaciated, and feeble; in all the diet, exercise, and occupations were otherwise the same. At the end of the month all of them appeared greatly improved in their general condition; they seemed plumper and stronger, and in some the countenance was even ruddy. In most of the cases there was a marked increase in weight at the end of the month.

Dr. Lindsay has also given glycerine internally in a variety of affections, in combination with several alteratives and tonics, such as iodine, iodide of potassium, quinine, and iron, or as the basis of expectorant or demulcent mixtures. It was found to answer extremely well as a solvent or suspending agent, or a vehicle. The author thinks that all the alteratives or tonics which have recently been combined with cod-liver oil, might be administered more agreeably if dissolved or suspended in glycerine. Such are iodine and quinine; the iodide, lactate, and bromide of iron; the protiodide, biniodide, and bichloride of mercury; the iodides of arsenic and sulphur; and the valerianate of zinc. By the majority of patients, to whom it was given as a nutrient, it was much relished; and its sweet taste would probably render it a favourite with children. The advantages of glycerine over cod-liver oil consist in its pleasant sweetness, and its freedom from all disagreeable odour; in its ready solubility in, or miscibility with, ordinary fluids; in the absence of the principles which, in animal and vegetable oils, so frequently nauseate and purge; and in its solvent and other properties, which render it useful as a vehicle or basis for pharmaceutical preparations. Its great disadvantage is its present comparatively high price. In opposition to Dr. Garrod, who has suggested that cod-liver oil acts simply in virtue of its oleine, Dr. Lindsay believes that glycerine is the active principle. Glycerine appears already to have been tried somewhat extensively in phthisis as a substitute for cod-liver oil, but the results described hitherto are contradictory. In other strumous cases, however, it appears to have proved serviceable.

Dr. Lindsay has used glycerine frequently as a dressing to wounds, ulcers, and abrasions of various kinds, with marked good results; and in these respects it seems to be equal, or even superior, to collodion. In the treatment of bed-sores, he regards it as superior to gutta percha, but inferior to collodion. In the treatment of skin diseases it has been found useful, not only by keeping the skin constantly moist, but by allaying the irritation which so frequently accompanies cutaneous eruptions.

Glycerine may also become very serviceable in pharmacy, and particularly in the preparation of extracts, pills, syrups, and infusions, it promises to be very useful. It has been proposed as a substitute for syrup in such cases as the syrupus ferri iodidi; and as a vehicle for medicines, it combines the properties of a syrup and a mucilage.—*British and For. Med.-Chir. Review, Jan.* 1857, *p.* 256.

183.—*On the Endermic Application of Iodide of Glycerine.* By Dr. FERDINAND SZUKITS.—The author of this paper, after enumerating the several forms in which iodine has hitherto been endermically applied, proceeds to remark, that all the solvents in ordinary use take up only a small quantity, with the exception of alcohol. It was therefore desirable to discover a solvent which, without affecting the skin like the alcoholic tincture, should take up as large a quantity as possible of the iodine. This solvent was found, in 1854, by Cap, in glycerine. Cap attributed to glycerine the part of a simple solvent, and he proposed it, among others, for the solution of bromine, iodine, oxyde of lead, strychnia, veratria, atropia, morphia, &c. To Dr. Richter belongs the credit of having first introduced into practice the solution of iodine in glycerine. He combined the iodine with iodide of potassium in order to facilitate the solution of the former; combined with this, it may be dissolved in any quantity up to the proportion of almost three to five. But in this concentrated state it is a caustic solution, and too strong for common endermic use; and the author has proposed a proportion of one part of iodine and five parts of glycerine, as a solution which may be applied for a long time to the parts about the neck and to the female breast, without any inconvenience except a slight

burning. In the neck and the female breast, the application, after two or three paintings, causes smart burning; and after four or five it produces more or less large excoriations, which require the discontinuance of the remedy and the application of cold fomentations. On the abdomen and in other parts, these symptoms occur much later. After a longer application of the iodide of glycerine, the epidermis peels off on the painted parts. The paintings were performed once a day in the author's cases, and paper of gutta percha was laid over the painted places to prevent evaporation. The paintings may be continued for a month without producing *iodism*, and without causing the slightest disturbance in the well-being of the patient. According to the experiments of Bonnet, the absorption and elimination of iodine may take place to the amount of a gramme of iodine (15·4 grains) per diem for several weeks, without any injury to the general health. The number of the cases in which Dr. Szukits has employed the iodide of glycerine were 24, in some of which the most satisfactory results were obtained.
—*Brit. and For. Med. Chir. Review, Jan.* 1857, *p.* 257.

184.—ON THE REMOVAL OF CATARACT BY EXTRACTION.

By J. Vose Solomon, Esq., Surgeon to the Birmingham and Midland Counties Eye Infirmary.

Relative Advantages of the Upper and Lower Sections of the Cornea.—A cataract having been extracted, the surgeon at once directs his attention to the means that are likely to obtain an early union of the wound. In furtherance of this end, I esteem it of importance that the upper section should have been made in the left eye as well as in the right. I have succeeded in accomplishing this upon patients whose eyes are not prominent relatively to the brow, and in some who experienced a difficulty, through nervousness or other causes, in looking downwards at the time of the operation. With the latter, patience and some tact are essential in the operator for the attainment of success. It is also requisite that the assistant should understand the management of the upper eyelid.

Assuming that the section has been properly made, that the iris has escaped injury, that no large amount of vitreous humour has been lost, and that the edges of the cut cornea have been accurately adjusted, the advantages of the upper incision will be the following. After the closure of the lids, and the fixing of them together by strips of court plaster, the cut surfaces are maintained in accurate apposition by the even and gentle support of the superior lid. The head and chest of the patient being raised, when he is in bed, the weight of the aqueous humour is principally sustained by the lower and *unmutilated* half of the anterior chamber. Moreover, the aqueous humour, the tears, and the other discharges are carried away from the wound, which is not therefore disturbed by their confluence between its edges. I reclined the right lens of an old lady from Shropshire, and immediately afterwards extracted the left by the upper section. A small bit of the margin of the reclined lens broke off, floated into the anterior chamber, and excited retchings, not vomiting, which continued for three days; yet the incision was not disturbed by it, and the eye rapidly recovered, as did the right, without the occurrence of any other untoward symptom.

But, where the lower section is preferred and accomplished without accident, it has the *disadvantage* of not being, in the majority of persons, so fully covered, nor so evenly and quietly supported by its corresponding lid, as in the upper operation. The relative position of the inferior tarsal border and the lower segment of the cornea is such in some patients that, in the event of the occurrence of active horizontal nictitation, the flap of the cornea is liable to be caught up by the tarsus, to become everted, and to rest upon the inner margin of the free border of the lid; and union is thereby interrupted. Morbid nictitation sometimes passes into spasmodic entropion—a most serious complication—which I believe to be caused by the everted flap, or a protrusion of the iris, giving rise to the sensation of a foreign body in the eye, which the lids attempt to remove by active winking. Moreover, there is a disposition in some old persons to inversion of the lower lid, even where no perceptible irritation exists, either upon the surface of the eye or its appendages.

As consequences of the disturbance of the corneal flap, the eye may be lost irremediably, or the pupil closed by inflammatory lymph. In the more favourable instances the wound is, after much delay, healed by a broad, unsightly cicatrix, to which the pupil, of irregular shape, has become adherent.

Again; few old persons can obtain sleep, unless their head and shoulders are raised in bed—a position which, in the operation we are considering, throws the whole weight of the aqueous humour that is contained in the anterior chamber upon the mutilated half of that cavity; besides which, on philosophical principles, there must be a tendency in this fluid to stream out and unite with the secretions which collect on the outside of the wound. It will be conceded that the greater the attraction to the aqueous humour to escape, the less is the probability of early union; and in practice we find, *cœteris paribus*, that the lower section does heal more slowly than the upper.

In the preceding remarks I have assumed that the operation has been completed without the occurrence of accident, that the iris has escaped injury from the knife, and that a large effusion of vitreous humour has not occurred. Surgeons, however, are not always so fortunate as to preserve the normal size and position of the pupil; the form of it may be altered, and the size enlarged; (1.) from a portion of the iris being cut off in the passage of the knife across the chamber; (2.) as a result of an unreduced prolapse of the iris through the wound *(hernia iridis)*; (3.) in consequence of the escape of a large quantity of the vitreous humour, when that part of the iris which is near to the incision becomes folded or curled up against the interior of the globe; or (4.) of injury by the knife to the ciliary nervous apparatus. From whatever cause the pupil may be anormally enlarged, the deformity will, as a rule, be less obvious, and the disorder of vision arising from unequal refraction less felt, and more within the control of the patient, in the upper than in the lower section.

Nevertheless, it must be admitted that, in certain exceptional cases of cataract, the eyes are so deep in the orbits, and the globes so perseveringly turned upwards, that the lower section only is practicable. Happily, in the former of these conditions the corneal flap is comparatively well covered by the corresponding lid. The position of the lids to the cornea is, in some subjects such, that in the act of closing the eye, the lower one arrives at the equator of the pupil sooner than the superior; and in these the evil effects which are consequent on irregular refraction will be, of course, susceptible of correction.

In regard to the use of atropine the night before the operation, I consider it undesirable, where there are not important adhesions between the iris and lens. The iris, when under its influence, is more liable to be cut by the knife, or to form a hernia in the wound after the lids have been dressed.

Position of the Patient at the time of the Operation. As relates to the position of the patient, the recumbent one is, without doubt, generally preferable. In cases, however, where the eye and the anterior chambers are small, and the patient not nervous, I have sometimes made the upper section in the right eye whilst the patient is sitting, and completed the other steps of the operation after he had lain down.

Should both Eyes be operated upon on the same day? When the patient is quite healthy, of spare habit, supplied with an efficient nurse, and the eyes do not present signs of disease, the double operation is justifiable. But where there is a doubt on either of these points, a single extraction should be performed.

Is it well to defer Extraction till the Patient is quite blind? Assuming that there have not been recent evidences of congestion of the internal structure of the eye, my reply is No; because the health of old people on losing their sight is often at once deteriorated from the loss of their usual exercise and amusements; they become highly nervous, and sometimes affected with a mild form of delirium, popularity termed rambling, and among the lower classes "mombling." Another objection is that the viterous choroid and retina are prone to become diseased.

The dressing of the eye after the operation cannot be too light and simple in its details, provided the case is properly tended by night and by day.—*Association Medical Journal, Dec.* 27, 1856, *p.* 1088.

185.—CLINICAL OBSERVATIONS ON THE SPECIAL APPLICATION OF LIQUOR PEPSINLÆ IN CERTAIN DISEASES.

By Dr. David Nelson, Professor of Clinical Medicine, Birmingham.

Dyspepsia, with Abdominal Tumours, &c.—Case 1.—Miss A. T., from the neighbourhood of Temple, aged about 32, complained of painful indigestion and vomiting, and of constipation alternating with irksome diarrhœa, the latter usually consisting of frequent teazing, thin stools, in very small quantity, but sometimes relapsing into frequent attempts with only the passage of small scybala. She had taken stomachic mixtures, and aperient medicines; but the latter had usually caused great uneasiness, with very little result in the way of evacuation, and she had become pale, thin, and weak. The heart and lungs were in sound condition, and the menses were regular; but, on examination, a large mass was discovered on the right side of the abdomen. It extended from the right groin to near the edge of the ribs like a Bologna sausage, was doughy to the touch in greater part, but towards the top felt harder and more tender. She said that, for a long time, she had felt a fulness and stiffness there in stooping, and also whilst lying straight out in bed; and further added, on finding me make particular examination, that she had a sister (who has since seen me) whose disease commenced with a swelling in the right side, which gradually extended over the abdomen, and finally maturated to an abscess, which is now discharging in vast quantities from the groin, and carrying her rapidly to the grave. My conclusion was, that there was some growth, or other cause of pressure in the neighbourhood of the liver; that this caused obstruction to the ascending colon, and that the mass of the present swelling consisted of long retained fæces, all the other symptoms being mere consequences of this state of things. She was ordered mild, softening, but not drastic, purgatives, and also injections, and took the liquor pepsiniæ in combination with soda and hydrocyanic acid. At the next visit she reported that the stomach felt easy, that she had not vomited since she saw me, and that there had been larger and more easy evacuations from the bowels. She could stoop and lie straight with more ease. Under a continuance of the same treatment the elongated mass disappeared, and then a roundish lump became distinctly perceptible under the edge of the liver, slightly tender to the touch. Not viewing it, from the appearance of the patient, as malignant, she continued the treatment, and applied tincture of iodine over the lump. It has now disappeared, so far as manipulation goes; but, though she feels very well, with no return of her old torments, still she is conscious that there is something in that quarter that burns and shoots with a curious pain after any hard exertion. The medicine under discussion could never have removed either the lump or even the fæces, *per se;* still it has proved a valuable subsidiary agent, if not essential.

Case 2.—Mrs. B., the wife of a respectable farmer in Worcestershire, aged about 35, first called at my house with a friend, in a nervous and excited state. She complained of indigestion, and what she said had been called chronic dysentery; for which she understood there was no cure. She said she could eat, but it did her more harm than good, giving her pain, constant eructation, and rattling of wind in the bowels, and often she vomited. Her bowels, she said, would be moved five or six times while dressing in the morning, and nothing would come but "slime and corruption," as she worded it. She had been in the habit of having chalk mixture, with laudanum, &c., which quieted the bowels for a time, but the symptoms always returned. The liveliness of her manner and eyes, her good complexion, and quiet pulse, made me doubt the existence of dysentery; but, under the impressions arising from the account, I first prescribed mercury and opium, and doses of castor oil, with little effect; and in one of her severe attacks I was summoned into the country. I then found the stools slimy, and complaints of severe abdominal pain; but she looked lively, spoke briskly, and moved about the bed in any direction with ease. This, to my mind, was quite inconsistent with that depression of dysentery, which will soon bend down the strongest men. On examination, the tongue was rather furred, the epigastrium and right side tender to touch, and there were discoverable about the navel several internal lumps, one solid, the rest yielding to pressure, and resulting, under such pressure, in the rushing backwards and forwards of flatus. She said, "That is how it serves me; when it fixes, the pain is dreadful; and when it shifts I get easy; but it only shifts for a time to fix again." It appeared obvious that this flatus was imprisoned within the folds of the transverse colon, that pressure could move it backwards and downwards in the ascending colon, but that there was some impediment, be it a tumour, or fibrinous band, or impacted fæces, that prevented its onward passage towards the rectum. There was no tenderness over the lower part of the abdomen, but a great deal of dulness and incompressibility in the course of the descending colon. Under this diagnosis, I stopped all medicine by the mouth, excepting a pepsine mixture, and ordered a succession of injections, consisting of nothing but warm water with a little olive oil. Of the benefit to be derived from this she was at first a little sceptical, as she felt convinced of having been long purged, and that nothing could be in her. However, on the visit of the following day, I found arranged in another room a series of vessels to the number of six, some nearly half full, others with but little in them, graduated specimens of each successive discharge, and varying from the hardest and darkest scybala to black, pultaceous, clayey stool; and, lastly, what might be called thin dark bile. There was in this last a good deal of heavy earth-like settling, arising, apparently, from the quantities of chalk she had taken; and all was offensive in the extreme. She now felt convinced of plain facts, and expressed herself as being much better. Still there was the lumpiness about the navel, and the confinement of flatus, though it did not give the same pain. For some time she took alterative doses of hydrargyrum cum cretâ, and Dover's powder at night, and liquor pepsiniæ with her food, while she persevered with the simple clysters till till the evacuations should become of natural appearance. By that time she felt well; and though the latent cause of obstruction may still exist, yet, by keeping an open channel by the above safe and simple means, she eats and drinks, and goes about her usual avocations with comfort.

Dyspepsia from Ulceration of the Stomach, &c.—Case 1.—Mr. J. H., a schoolmaster, of Staffordshire, aged 38, had been afflicted with severe dyspepsia for several years; and, in spite of treatment by soda and bitters, &c., it had steadily gained upon him, till his whole constitution got greatly impaired under loss of nutrition. At the extremity of his illness, when I was consulted, he complained of agonising pain after almost every meal; his tongue was foul; the epigastrium very tender and retracted; the bowels costive; and if he did not vomit three times a day he never vomited less than once, the undigested matter coming back very sour, and sometimes consisting of pure coagulated blood, like coffee-grounds. The attacks of pain and vomiting invariably supervened after horse-riding, walking up hill, or even speaking for a little time. He was also much emaciated, his cheeks very hollow, and the skin of a pale lemon colour, so that he was called "the walking ghost" by his neighbours. Though no tumour or hardness could be detected, all these symptoms quite convinced me at the time of the existence of a malignant hardening and ulceration. He was advised to cease from the toil of school duties, as he was not quite dependent thereon; to keep easy, and live upon spoon meats. He was also given colocynth pills for the bowels; and for the hemorrhagic ulceration quinine and nitrate of silver before food, while he took the alkalised liquor pepsiniæ, with morphia and hydrocyanic acid, after each meal. Under this treatment the symptoms were arrested, and he gradually improved in flesh, strength, and colour, The pains and vomitings subsided, he began to be able to bear stronger food and drinks, and he could walk and talk without the old discomfort. He has now regained his former bulk and florid complexion, and his appetite is sound. He is still aware that the stomach is his weak point; so that if he eats beef, pastry, or the like, they pain him and swell him up. The liquor pepsiniæ removes such symptoms, and he therefore takes it occasionally. From the happy result, I am now disposed to withdraw my former fears of malignant action (though for such fears there were sufficient grounds), and to view the case as one of simple ulceration. Death alone can reveal the whole truth; but it seems very clear, from the whole history, that the peptic liquor was here the grand instrument of curation; for calumba, creasote, and all other ordinary settlers of the stomach were only wont to derange it the more. The patient himself has the most lively consciousness of the beneficial effects of the pepsine.

Case 2.—Miss S. J., a girl of 18 or 20, was brought by her mother to me from Cheltenham, labouring under pain and fulness of the epigastrium and right side, vomiting of blood, and sometimes of purulent matter. She was excessively anæmic, her skin being nearly white, and the legs œdematous. There had been no catamenia for a considerable time, and her father, as reported, had died of cancer of the stomach. She became worse after the journey. I saw her in bed, and detected a rounded swelling to the right of the epigastrium, which I inferred might be a hepatic abscess, complicated with stomach ulceration. At this time she lay faint and helpless, vomiting every thing she ate, sometimes intermixed with blood, and occasionally being composed entirely of muco-purulent matter combined with bile. She was afraid to speak above a whisper, her tongue and mouth were parched, and her legs pitted deeply under pressure; the pulse was small, frequent, and thready, about 140 per minute. Soothing poultices were applied over the swelling, large masses of hard round fæcal matter were removed by injections, nitrate of silver was administered before food, and the alkalised liquor pepsiniæ, with hydrocyanic acid, was given after food, at intervals of one hour. At the same time the food was entirely pultaceous or liquid, and consisted of the smallest quantities at a time, seldom more than one teaspoonful. After several fluctuations, and occasional severe attacks of purulent vomiting, she gradually began to amend. So soon as the above symptoms abated, she went through a course of quinine and steel; and, after a tedious treatment of about ten months, she recovered plumpness, colour, and strength, contrary to the expectations of all her friends and acquaintances. The remedy could have little power over hepatic abscess; but I can scarcely see how, in her utterly reduced condition, she could have gone through the treatment without the support derived from the solvent action of the pepsine upon the food—oysters, arrowroot, and milk and wine, having all been previously rejected.

Case 3.—Mrs. M. C., a married person, aged 28, pale and delicate, had had tenderness of the epigastrium and right side for many years; but recently the evil had become greatly aggravated, and she also suffered under an extensive bronchitis, chiefly implicating the right lung, with painful dyspnœa, and universal sibilant respiration. The pulse was 140; and, from the alarming condition of the chest, phthisis had been diagnosticated, and country air and cod-liver oil suggested as a last resource. From the general appearance, I was not equally disposed to believe in the presence of tubercle, but rather directed attention to the stomach and liver. There was retraction of the abdominal muscles, and pain and tenderness all over the right side, from the shoulder to below the umbilicus; but in the epigastrium it was extreme, so that she shrank under the slightest pressure, and feared to take a common inspiration. Besides the vomiting, which was very acid, and the asthmatic bronchitis, there were immense discharges of lithates by the urine, with pain in the back, and a suffocating cough.

She had to be propped up in bed, and supported under the least effort. Six leeches were applied over the stomach and along the right side at once; and these were followed up by a series of blisters, while she took antispasmodic diaphoretics, with small quantities of liquid food and pepsine largely imbued with soda, and had daily injections of decoction of poppy. Under this treatment, continued for some time, the asthmatic bronchitis gradually abated, the urine became clear, and the pain slowly departing from other parts, narrowed and narrowed to a lesser circle, until the seat thereof could be covered with a half-crown piece immediately under the point of the sternum; and she took quinine and nitrate of silver with marked benefit. She was now fast improving, so that I had ceased attendance, when an event occurred in the house which led to great bodily exertion and excitement on her part, and the eating of some beef and pickles to supper. Next morning I was requested to attend, and found all the stomach symptoms greatly aggravated. She suffered intense pain, and vomited every thing she took. By and by she threw off muco-purulent matter in great quantity, intermixed, it seemed, with fæcal matter: meanwhile the bowels were confined and racked with spasm. As calomel and opium had always produced very bad effects before whenever administered, she now had only injections of decoction of poppy, by the machine with long tube, and draughts of soda, morphia, and hydrocyanic acid; while blistering was renewed over the epigastrium, and nothing was allowed but a teaspoonful of gruel or milk at a time. By this means the excessive irritability being overcome, she resorted afresh to the quinine and silver pills with constant and marked effect. These she took before food, and the liquor pepsiniæ, with morphia and hydrocyanic acid after, and so again gradually recovered. Nothing, however, but liquid food of the lightest nature was permitted; and she herself soon saw, that so soon as she partook of hard, solid, or otherwise indigestible food, so surely she had a relapse. This fact having made her cautious, she conformed strictly to rule, until she found she could eat almost anything with impunity. She has now gained her original flesh, colour, and strength; though quite aware of a something at the pit of her stomach, which does not admit of being trifled with. Both sides of the chest have a clear resonance, the respiration is soft, 16 to 18 in the minute, and the pulse ranges from 65 to 80—all clear proofs of the absence of pulmonary tubercle.

Dyspepsia with malignant Disease of Stomach, Liver, &c.—*Case* 1.—Mrs. M. B., an elderly widow, and housekeeper, consulted me in regard to long standing indigestion, with lancinating and burning pains in her right side. She was attenuated to the last degree, of shrivelled lemon coloured aspect, sunken and knotty in the abdomen, and felt great tenderness on pressure of the stomach and liver; while, along the edge of the latter organ, a series of hard lumps could be felt. The little she ate lay heavy, and the stools were pale. Frictions of mercury, and the exhibition of the ordinary stomachics had little availed; but on giving mercury and chalk with ox gall, and a liquor pepsiniæ mixture, the alteration was great. The stools improved, the pains were subdued, and she gained strength, and even a little more fulness and colour of the face. The organic disease remains, but its most troublesome symptoms are subdued.

Case 2.—Mrs. S. R., carrying on the business of a master carrier, had been the victim of what she called a "horrible bad digestion" for some years past. She feared to eat for the pain, had constant flatulence, vomited several times a day, and her bowels were always bound, and difficult to be moved. She had been stout, but had been wasted to skin and bone, the skin being of a pale straw colour. As soon as she lay down the examination revealed the presence of a hard lumpy tumour between the navel and the breast bone, which I inferred to be cancerous. Injections were ordered, and pepsine was administered, with morphia and hydrocyanic acid, after liquid or pultaceous food, while a belladonna plaster was applied; and her report is, that this is the only medicine that has ever subdued her bad symptoms without inducing something else unpleasant. She can now attend to her business.

Case 3.—Mrs. E. C., a widow, aged 54, with symptoms so similar to the above that they need not be described, had also a hard tumour in the same place. She has found, in the course of journeying from place to place, that she cannot obtain ease under any other treatment than the above. She therefore carries her bottle always about with her, and has gained in flesh, strength, and colour, in spite of the continued presence of her evil tumour. She now enjoys life by keeping at ease.

Case 4.—Mrs. F. M. was, in almost all respects, similar to the above two: faint, emaciated, straw coloured, with pain and vomiting after food, and a tumour in the epigastrium. The treatment was about the same, and she feels easy.

Case 5.—Mr. W. T., a broker, 48 years of age or so, had been long the victim of dyspepsia, and had undergone many a series of treatment with temporary ease, the disease still advancing. It did not appear that anything specific had been made out. He had the pains, and vomitings, and constipation, was thoroughly emaciated, and of a deep straw colour, intermixed with smokiness, as it were. He had the additional bad symptom of swelled legs; and, on examination, there was discovered a hard, stone-like mass to the right of the epigastrium. Purgatives were used, a belladonna plaster applied, and the alkalised liquor pepsiniæ, with morphia and hydrocyanic acid, given after liquid food; after a short period he also had quinine. So much easier did he feel from this, that he began to think himself cured, and acted as usual. In consequence I was again sent for, under feelings of much alarm. Having indulged his fresh gained appetite, and neglected his bowels, the pain, the sickness, and swelling of the legs had returned, and he also feared that the tumour had suddenly grown to an immense magnitude. It was obvious, however, that it all arose from the hepatic tumour pressing on the colon, and causing it to be gorged with retained fæces. Repeated injections removed all the mass, except the originally discovered solid growth; but he never again rallied from the debility, swelled legs, &c., and so died. I was not present at the *post mortem* examination; but the existence of a malignant tumour was reported to me.

Tuberculosis, and Tabes Mesenterica of Infants.—The number of these cases that have presented themselves precludes my entering upon them individually. Let it suffice to picture them generally, and according to their broad features: to wit, the wrinkled, discontented, fretful faces of the young children, rather resembling those of old men and women in the most unhappy humour possible; the small shrunken chests; the large toad-like bellies; shriveled extremities; and bloodless wax-like fingers. Such patients often have voracious appetites, without any good results: the food passing off in diarrhœa, without having been digested. By means of hydrargyrum cum cretâ and Dover's powder, and the liquor pepsinæ by itself after food, the changes in such children have been very extraordinary, especially when the diet has been consistent with the other treatment, and goats' or asses' milk used, along with raw egg. The same results will accompany its use amongst the pot-bellied young of the lower animals. My daughter has often been amused with its rapid effect upon a poor kitten in that condition, now grown to a large, active, and healthy cat.

Dyspepsia with extreme Albuminuria.—*Case* 1.—Miss E. P., the daughter of a publican, about 20 years of age, had begun to decline in health for some years before. Her flesh and colour began to decrease about two years before seeing me; and she became weak, bronchitic, and short of breath, while her legs swelled, and the menses had disappeared for eighteen months. She had been treated for this anæmia and amenorrhœa, and had hoped that the re-establishment of the menstrual flux would put her quite right; but it never did appear. On examination she was found emaciated, with much whiteness of the cheeks, canthi, lips, tongue, and gums. Her chest was oppressed, her skin dry, her cheeks under the eye-lids swelled, and her legs and thighs immensely œdematous, going into folds and sulci, almost resembling elephantiasis, yet pitting freely under pressure. She had pain in her back, rose frequently in the night time to make water, and the urine passed was almost entirely coagulable albumen. The case appeared very desperate; but, by ordering the recumbent position, and employing tonics, diaphoretics, and diuretics, along with bandages to the legs, the dropsical swellings and the cough gradually disappeared after a certain time; and then, under a good diet, and a free allowance of eggs and porter, accompanied with quinine and iron, followed always by liquor pepsinæ, she rallied so far as strength, flesh, colour, sound sleep, and less frequent micturition could indicate. She also menstruated two or three times in the course of the treatment, and has felt for some time past so well as to attend to her father's business with ease. On a recent examination of the urine, the albumen was somewhat diminished, but still in great amount, fully three-fifths of the urine. She continues the eggs, with quinine and steel, and takes the liquor pepsiniæ whenever her meals lie heavy.

Case 2.—J. B., an elderly man, with sallow puffy face, swelled legs, pain in back, and immense discharges of albumen and blood by the urine, had first the bleeding stopped by large doses of acetate of lead and opium, and afterwards the dropsy overcome by tonics and diuretics. Subsequently he used quinine and steel with his food, which consisted much of eggs, and he took liquor pepsiniæ after it. The albumen remains much as before, but there is no blood. He feels easy, and does not go on from bad to worse as formerly. He sleeps well, eats well, and enjoys working in his garden.

Diabetes.—Case.—W. W. Esq., a gentleman of our own profession, consulted me between six and seven months ago, labouring under diabetes of eighteen months or two years standing. He felt enfeebled; the skin was dry; he slept badly; the urine was in great quantity, and highly charged with sugar. He had been obliged to relinquish practice. As he is a professional man, and a man of talent, I shall allow him to report for himself, by quoting from his letters. He began a course of liquor pepsiniæ, with quinine and steel in the beginning of July, and the following are extracts from communications of successive later dates.

July 16, 1856. I am pleased to inform you that I am progressing very well. The liquor pepsiniæ quite agrees with me; especially in the form of mixture which you recommended, as I have a *little* acidity and flatulence. I do not make much, if any, more water than the usual quantity; certainly not so much as I have taken of fluids. Specific gravity about 1030. No particular thirst; skin acts properly; appetite good; I sleep well."

"August 20th, 1856. I am pleased to inform you that I am much better, being considerably improved in strength. I have no symptom of indigestion, my stomach performing its functions well at all times, and my appetite being good, without being ravenous. The urine is 1028, and about 60 ounces in 24 hours, and containing less sugar. Pulse 80 to 85. Skin acts naturally, with the natural smell under armpits, &c. *Indeed I am much stronger.* I consider the mixed diet you allowed has, besides its greater agreeableness, done me good; and my stomach now can digest anything. My bowels are perfectly regular, and I sleep well. I have no pains in my head."

"Nov. 24th, 1856. I sleep well, and soundly, and walk from two to four or six miles every morning, according to weather; besides this, I am engaged in helping a professional friend." (Here he describes his habits of diet, a mixed one, with porter, brandy-and-water, and light pale sherry.) "I have taken the liquor pepsiniæ, with the iron and quinine, three times daily; and lately only twice. My appetite is remarkably good; my bowels are regular, not the least costive. Though I feel so much better, I wish to go on with the pepsine, &c. Two days I was without it, and did not feel so well. The increase of weight since taking your medicine was eleven pounds a fortnight ago, and I feel on the increase. I can eat anything; pork pie or any meat to breakfast. I do not make more water than an ordinary person, certainly not so much as I drink. Specific gravity 1030; and yet, with the liquor potassæ test. there does not seem to be any great amount of sugar. Though I do not wrap up at all, I do not feel the cold as I used to do. I feel deeply grateful to you. So well do I feel that I think of recommencing practice after Christmas. There is one symptom worthy of remark; and that is, that I *feel better* after a hearty meal, such as breakfast and dinner, both of which I eat heartily."

The foregoing are but a few specimens culled out of a great number. I make no further comments, as the facts speak for themselves to all rational physicians, and to my professional brethren in general; but I would merely add, as a standing caution, that the benefits of the remedy are not to be expected from its random or empirical use, but only when such use is grounded on a scientific review of all the important functions of the body in each individual case.—*British Med. Journal, Feb.* 28, 1857, *p.* 169.

186.—*Lactic Acid a remedy for Dyspepsia.*—A remedy which has for a long time been used by Dr. Nelson, of Birmingham, and subsequently by many French Physicians, under the name of Pepsine, for the cure of dyspepsia and other functional derangements of the stomach, has within a short time been prescribed freely by some Physicians in London. It has been very favourably noticed by Drs Ballard and Sieveking. Dr. O'Connor has also tested its value in those cases in which it has been recommended, but not with the success attributed to its use. He was led subsequently to have recourse to lactic acid, a remedy which he believed likely to be more beneficial in those affections of the stomach in which the so-called pepsine has been administered. Before using the acid internally, Dr. O'Connor, we understand, in order to test its digestive powers as compared with pepsine, placed an equal weight of animal fibre, in equal proportions of pepsine and lactic acid, in separate vessels, in an equal temperature, when he found that the fibre in the lactic acid was reduced to a pulpy state in a very much smaller space of time than that which was put into the lepsine. After this experiment, which he thought sufficiently conclusive of the superiority of the lactic acid as a promoter of digestion, he had recourse to its use as a remedy in those affections of the stomach before alluded to. The great number of patients with affections of the stomach presenting themselves among the out-patients of the Royal Free Hospital, afforded an extensive field to Dr. O'Connor for testing the efficacy of lactic acid in dyspeptic conditions. After a trial in over fifty cases, he considers that the good results following its use fully justify him in recommending it as a valuable agent. It is very necessary to be sure that the lactic acid prescribed should be of chemical purity, and of uniform strength. The dose varies from half a drachm to two drachms or more, in infusion of calomba, or a little cinnamon-water. It should be taken during a meal. The lactic acid found in shops is not generally pure; that which Dr. O'Connor has found to be most efficient, from its greater purity, is prepared by Mr. Bastick, of Brook-street, Grosvenor-square.—*Med. Times and Gazette, April* 25, 1857, *p.* 409.

187.—*Lactic Acid versus Pepsine.* By Dr. W. Stevens Squire, London.—[The following experiments were performed by the author in consequence of Dr. O'Connor's assertion that lactic acid, *per se*, possesses the property of digesting animal matter.]

I employed for this purpose the pure hydrated lactic acid $H_1 C_6 H_5 O_6$, and the substance known as Boudault's pepsine, which consists of pepsine properly so called, mixed with a definite proportion of starch, with a view to keeping it in a convenient form. The comparative digestive fluids which I employed were prepared in the following manner:

1. Twenty grains of hydrated lactic acid were dissolved in one fluid ounce of distilled water; and this liquid I will call for brevity, lactic acid.

2. Fifteen grains of Boudault's pepsine were treated with one fluid ounce of distilled water, to which two grains of hydrated lactic acid had been previously added; after standing half an hour the whole was filtered. The filtered liquid, then, I will call pepsine.

To each of these digestive fluids I added one drachm of powdered dried fibrine, obtained from the blood of the calf. In each case the mixture formed the stiff, gelatinous paste; they were then exposed together in a water-bath, to a temperature of 100 deg. Fah. At the end of one hour the fibrine in the pepsine had given way and softened, and at the end of two hours and a half was completely digested presenting the appearance of a viscous, somewhat milky fluid. In the lactic acid specimen, however, no such phenomenon appeared; it remained hard and continued so, though exposed for nine hours to the same temperature. In a similar experiment with small pieces of roast beef, that in the pepsine was almost gone at the end of nine hours, while that in the lactic acid had simply swelled up and become bigger.

These experiments sufficiently demonstrate the inefficiency of lactic acid, *per se*, as a digestive agent, when compared with acidified pepsine. But in order to obtain an accurate result, I placed an oblong piece of coagulated white of egg weighing exactly sixty grains, in an ounce of each of the digestive fluids described above. These two specimens were exposed, as in the other cases, to the heat of a water-bath at 100 deg. for nine hours. At the end of this time the piece of albumen in the pepsine had considerably diminished in size, and when taken out of the liquid and allowed to drain on blotting paper, weighed forty-seven grains, showing a loss of thirteen grains. The piece of albumen, however, in the lactic acid had merely swelled up, and absorbed water, and when drained and weighed, was found to have increased twenty grains in weight, owing to the absorption of water.

That dilute acids can play the part of the gastric juice has long ago been denied by Lehmann, and it would have been unnecessary to refute it now, had it not been put forward by a medical man. There can be no doubt that lactic acid plays a very important part in acidifying the gastric juice, and on this account I used it to acidify my pepsine, but it is not less certain that it has no digestive power by itself.—*Med. Times and Gazette, May* 2, 1857, *p.* 445.

188.—ON DIABETES AND SACCHARINE CONDITIONS OF THE URINE.

By Dr. Alfred B. Garrod, University College.

With regard to the chemical composition of diabetic urine, I may state that its great peculiarity consists in containing sugar; and, as far as analysis has yet shown, I believe this is the only constant abnormal ingredient. This sugar, which is named diabetic sugar, resembles very closely that found in most fruits, such as can also be readily produced artificially from starch, and named grape sugar or glucose. I say that diabetic sugar is *allied* to glucose, for it appears not to be absolutely identical with it, as usually supposed.

The varieties of sugar found in the animal and vegetable kingdoms may be conveniently grouped in two distinct classes, from the peculiar reactions they exhibit.

The first class, including cane-sugar and that from beet root, is thus distinguished. When boiled with a solution of potash, soda, lime, or any other fixed alkali or alkaline earth, it is not decomposed; the solution turns the plane of polarisation of a ray of light to the right, and, by the action of dilute acids, it is converted into sugar of the second class. When in contact with yeast, it also undergoes transformation into the second form, prior to the occurrence of vinous fermentation.

The sugars in the second group, as glucose, diabetic sugar, sugar from the liver, &c., are readily broken up when boiled with alkalies, with the formation of brown coloured acids, as melassic and sacchulmic acids; their solutions turn the plane of polarisation to the left; they readily ferment with yeast, and also reduce the salts of copper. It appears, however, that there are slight differences in these different sugars, as that obtained from the liver, and also diabetic sugar, more readily undergo fermentation than the glucose from starch.

From a knowledge of these properties, it is not difficult to discover the presence of diabetic sugar in urine, at least when it exists in any quantity, and more especially when this fluid exhibits the characters commonly met with in cases of confirmed diabetes. Perhaps the most simple test is that named Moore's test, which consists in heating the urine in a test tube with about an equal bulk of liquor potassæ of the Pharmacopœia strength; just before the fluid arrives at the boiling point, decomposition ensues, and a fine yellow or orange colour is produced; this gradually deepens, and, if the sugar is large in quantity, becomes orange brown and even dark brown; at the same time, a distinct odour of caramel or burnt sugar is evolved. By a little manipulation, this test can be rendered exceedingly delicate; for, if we first add a drop or two of the potash solution, to ensure slight alkalinity and then some good bone black or animal charcoal, and throw on a paper filter, we obtain a fluid quite colourless, and which, on the further addition of the liquor potassæ, gives rise to no precipitate of earthy phosphates, and when heated, the yellow or orange colour can be much more readily observed than in the urine before preparation; again, the delicacy can be still further increased by using only a *few drops* of a concentrated solution of potash in lieu of an equal bulk of that of the Pharmacopœia strength, as the volume is then scarcely increased. Some objections to this test have been made, and do perhaps exist; Dr. Owen Rees has stated that if the potash solution contains lead, it may cause a brownish colouration from some sulphur compound in the urine, especially if albumen be present; with a discolourised urine this could be easily distinguished. There are doubtless other solutions besides sugar which may change colour when heated with potash; but I believe these seldom exist in the urine, or are likely to lead to any serious error, when due precautions are taken in the employment of this reaction.

Moore's method is an exceedingly valuable one, for if *it* is not quite conclusive as a *positive* test of the presence of sugar, it is at least as a *negative* one; and in a prepared decolourised urine, should no change of colour occur on boiling with potash, we may safely conclude that no sugar exists, or, at any rate, such traces as may be safely disregarded. I have by means of this test recognised sugar in the urine of an apparently healthy person, about four or five hours after a full meal, no trace being discoverable in the fluid passed at a period most remote from the influence of food. I believe it will detect a small fraction of a grain in a fluid ounce of urine.

The next tests are those depending on the reducing power of sugar upon the salts of copper, and of these, several modifications have been proposed. One, named *Trommer's* test, is thus performed. The fluid to be examined is treated with caustic potash, and if there is much precipitate of earthy phosphate, it should be afterwards filtered, or the urine may advantageously be decolourised in the way I described when speaking of Moore's test; an excess of potash is of no consequence, and the alkali should always be present in quantities more than sufficient to decompose the sulphate of copper which is subsequently added; this latter should be in a dilute state, and added drop by drop; a precipitate of the blue oxide of copper at first falls, which is dissolved if sugar exists, with the production of a beautiful azure blue colour; the amount of the oxide dissolved being usually in proportion to the sugar present. When no further oxide is taken up, the liquid should be heated to the boiling point, the azure blue coloured is changed to a yellow or orange yellow, at the same time that turbidity is induced by the suboxide of copper becoming precipitated. Some precautions are necessary in making use of this test; and we must remember that albumen and ammonia salts have the power of dissolving the oxide, and producing the blue solution; and that very prolonged boiling may cause other substances which may be in the urine, beside sugar, to give rise to the precipitation of some suboxide of copper. These other substances are uric acid, creatine, and creatinine.

Another method of applying the copper test is to prepare a solution of the blue oxide of copper, in the way prepared by Barreswil, Fehling, Poggiale, and others. Barreswil's solution is thus prepared. Take 96 grains of cream of tartar, 96 grains of carbonate of soda (crystallised), 23 grs. of sulphate of copper, and 64 grains of caustic potash; dissolve in two fluid ounces of distilled water, and filter. We have then a beautiful azure blue liquid, which, when added to urine or any fluid containing sugar, and the mixture brought to the boiling point changes colour in the way before described, and becomes turbid from the precipitation of the red suboxide of copper. This test is subject to the same objections as Trommer's; and it is important to take care that it is either freshly prepared, or at least that there is an excess of caustic alkali, otherwise it may deposit the oxide even when no sugar is present. Both these tests, I believe, are sufficient, with proper precautions, to determine the presence or absence of sugar.

The test by fermentation with yeast, is one which has always been regarded with satisfaction, and it is also a method very readily performed. If we fill a tube, closed at one end, with the urine, to which a little yeast has been added, invert it into a saucer filled with the same, and place the apparatus in a warm room, or at a temperature of about 80° Fahr., should sugar be present, fermentation will speedily ensue, and carbonic acid being generated, the urine will be depressed in the tube. We may readily ascertain the nature of the gas which is formed, and may also obtain the spirit from the urine so fermented, and thus be enabled to assert positively that the fermentation has been vinous in character.

Many other qualitative tests have been from time to time proposed, such as the formation of *torulæ* in diabetic urine, the crystallisation of the sugar when a little of the fluid has been allowed to evaporate upon a piece of glass or in a dish; and patients themselves have not unfrequently been led to the discovery of the affection under which they have laboured, by observing that their linen became stiff from the sugar contained in the urine; but when such phenomena are observed, the medical man should have no difficulty in diagnosing the case from even a superficial examination. It is only in cases in which the sugar exists in mere traces, that there can be any *real* difficulty; and I believe that when the potash, copper, and fermentation tests fail to demonstrate the existence of this principle in the urine, its presence is of little, if any, pathological importance.—*British Med. Journal, April* 4, 1857, *p.* 277.

189.—ON THE BRAN LOAF FOR THE USE OF DIABETIC PATIENTS.

By John M. Camplin, Esq., F. L. S., &c.

[Dr. Garrod in his recent lectures on diabetes, expressed his opinion that the bran cake recommended by Mr. Camplin in the Medico-Chirurgical Transactions for 1855, was by far the best substitute for bread.]

Having since the publication of that paper made improvements in the preparation of this important dietetic agent, I now present the amended formula to the profession, in the confident expectation, that as it will now be more extensively known, it will soon be in general use in our hospitals, as well as in private practice. If a proper mill for grinding the bran is obtained, it may be easily prepared; it is by no means unpalatable, and as it contains scarcely any starch, it at once checks the formation of sugar, and arrests the whole train of morbid actions.

The formula I now use is as follows:—

Take a sufficient quantity (say two or three quarts), of wheat bran, boil it in two successive waters for ten minutes, each time straining it through a sieve, then wash it well with cold water (on the sieve), until the water runs off perfectly clear; squeeze the bran in a cloth as dry as you can, then spread it thinly on a dish, and place it in a slow oven—if it be put in at night let it remain until the morning, when if perfectly dry and crisp, it will be fit for grinding. The bran thus prepared must be ground in a fine mill, and sifted through a wire sieve of sufficient fineness to require the use of a brush to pass it through; that which does not pass through at first, must be ground and sifted again, until the whole is soft and fine.

Take of this bran-powder 3 ounces, Troy, 3 fresh eggs, 1½ ounce of butter, rather less than half a pint of milk; mix the eggs with part of the milk, and warm the butter with the other portion; then stir the whole well together, adding a little nutmeg and ginger, or any other agreeable spice. Immediately before putting into the oven, stir in first 35 grains of sesquicarbonate of soda, and then 3 drams of dilute hydrochloric acid. The loaf thus prepared should be baked in a bason (previously well buttered), for an hour or rather more.

Biscuits may be prepared as above, omitting the soda and hydrochloric acid, and part of the milk, and making them of proper consistence for moulding into shape.

If properly baked the loaves or biscuits will keep several days, but should always be kept in a dry place, and not be prepared in too large quantities at a time.

I would refer your readers to the paper already alluded to, for the circumstances under which I was led to the use of this preparation, and do this with the more confidence, as subsequent experience establishes the importance of the bran-loaf as a remedial agent, and confirms my general opinions on the treatment of diabetes.

The bran biscuit may be purchased of Mr. Smith, baker, of Gower-street North, and a bran loaf or cake, nearly resembling the above, of Mr. Blatchley, confectioner, near the Pantheon, Oxford-street; both these parties prepare a biscuit or cake which answers well medically, but is not so agreeable as that prepared under my own direction. The difference is probably owing in a great measure to their not having hitherto used mills of sufficient fineness. I have reason to expect that they will henceforward remedy this defect.—*Med. Times and Gazette, May* 2, 1857, *p.* 431.

190.—ON THE COMPOSITION OF BREAD,

By Dr. WILLIAM ODLING, Professor of Practical Chemistry, Guy's Hospital.

Nitrogen or Gluten.—The prevalent opinion amongst physiologists is, that the nutritive properties of bread are in proportion to the amount of its nitrogenized constituents, though, indeed, the correctness of this opinion has been called in question by two eminent agricultural chemists, Messrs. Lawes and Gilbert. The two highest determinations of nitrogen that I have obtained are respectively 3·42 and 3·21 per cent. in the dried, or 1·89 and 1·83 per cent. in the freshly-baked bread; the two lowest determinations are 1·66 and 1·81 per cent. in the dried, or 0·93 or 1·01 per cent. in the freshly-baked bread. It is observable that the highest determination is more than double the lowest—a circumstance by which I was at first much surprised. On referring, however, to published analyses of flour, I find that the amount of gluten varies from 7 to 15 per cent. The mean of all the twenty-five estimations gives 2·23 per cent. of nitrogen in the dry, and 1·26 per cent. in the freshly-baked bread. My average of nitrogen in freshly-baked bread corresponds very closely with the prior determinations of Dr. Playfair, and of Messrs. Lawes and Gilbert.

Alum.—Alum was detected in eighteen out of these twenty-five samples. No estimation was made of the quantity; but from the appearance of the precipitates, I should distinguish three loaves as containing very much, and three as containing very little, of this impurity. The very extended use of alum in bread, is in itself almost an evidence that some benefit accrues to the baker from its employment. The probability of its exerting an injurious effect upon the consumer, must depend materially upon the quantity introduced. Whatever may be our opinions upon the subject, however, we have, it must be confessed, no positive evidence that the habitual use of alum in bread is, or is not, deleterious.

The qualities attributed to alum by different bakers vary considerably. I believe that one great effect of alum is to hinder the transformation of starch into sugar, during the process of baking. Two years ago, I had sent to me for analysis, a loaf which was sticky, saccharine, and sodden throughout, but which had been made from apparently good flour. In the autumn of last year, I received from Tring, in Hertfordshire, a sample of flour which was unadulterated, which contained the normal quantities of gluten, starch, dextrin, &c., each of good quality, which had, in fact, only one fault—it would not make bread. The result of the baking was a sweet, sticky, dark-coloured mass. The wheat from which these two flours had been prepared, had doubtless, undergone a partial malting, with the consequent formation of diastase. Between such specimens as these, and the most perfect flours, every gradation exists. The object of the baker being to retain as much of the starch as possible, with its chemical and physical properties unaltered, he probably finds this object best attained by the addition of alum, which substance I have found experimentally to interfere greatly with the transformative powers of diastase. Of the seven samples of bread which did not contain alum, two were cheap loaves obtained from the bakehouses of two large associations of work-people, and four were full-priced loaves purchased at old-established shops of high repute.

Copper.—In seven out of the twenty-five samples, the presence of *copper* was detected. These are, I believe, the first cases on record in which English bread has been shown to contain copper. I should be loth, however, to charge London bakers with the intentional sophistication of their bread with blue vitriol, unless it could be clearly proved that the presence of copper was otherwise inexplicable, or unless we had positive evidence of the fraudulent introduction of the cupric salt. The probabilities in favour of the accidental presence of the copper are—1st. That in three of the samples containing copper, no alum was detected. Those who would adulterate with copper would probably adulterate with alum also. In two of the above cases, however, the copper was in the most minute traces. 2ndly. That copper is a very widely distributed element, and that it might possibly, though somewhat improbably, have been introduced in the salt, alum, yeast, &c., or have resulted from the use of copper utensils. The probablities in favour of the fraudulent introduction of the copper are—1st. That sulphate of copper has the reputation, probably well founded, of exerting a powerful effect in facilitating the fermentation, improving the appearance, and increasing the water-retaining powers of bread. The specimen of bread which yielded me the highest per-centage of water, contained copper. 2ndly. That in four of the specimens, at any rate, three of them containing alum in addition, the amount of copper was sufficient to effect its ascribed improvements.

The experiments upon which the above observations are founded were performed as follows:—The nitrogen was determined by a slight variation of Will and Varrentrap's method, as modified by Peligot. This consists in a combustion of the bread with soda-lime, and an estimation of the amount of ammonia produced, by means of standard solutions. For the detection of the alum, about 500 grains of bread were incinerated. To the resulting ash, weighing generally about six or seven grains, two or three drops of chlorhydric acid, with a few drops of water, were added. After a short ebullition, an *excess* of solution of potash, usually amounting altogether to five or six drops, was added. The filtrate was then acidified with chlorhydric acid, and slightly supersaturated with ammonia, whereby the alumina was precipitated. The potash had been purified by solution in alcohol prior to its solution in water. From an ounce of its aqueous solution, a trace of alumina could be precipitated, but the quantities of solution used in the above experiments gave no indication whatever of impurity. The advantages of the above-described process are, that the quantity of the reagents is reduced to a minimum, and that the whole of the alumina existing in 500 grains of bread is concentrated in less than a drachm of liquid. Aqueous infusions of each of the alumed breads had markedly acid reactions, probably from bisulphate of potash, and yielded considerable precipitates of sulphate of baryta. For the detection of the copper, about 500 grains of bread were incinerated to a white ash. This was treated with chlorhydric acid in a small platinum capsule, and then an electrolytic action established by the introduction of a piece of zinc, so as to touch the platinum through the liquid. The metallic deposit on the plantinum, when treated with a drop of ammonia, yielded a blue liquid, which, after neutralization, gave a decided chocolate-coloured precipitate with ferrocyanide of potassium. The metallic deposit, the blue solution, and the red precipitate were obtained in each of the seven cases.

Addendum.—Since writing the above article I have again obtained bread from five out of seven bakers whose loaves previously yielded me copper, and in each instance have again detected the impurity.—*Lancet, Feb.* 7, 1857, *p.* 137.

191.—ON PERMEATION OF GASES.

By H. Osborn, Esq., L.R.C.P., &c. Southampton.

When a person has been exposed to the fumes of a charcoal fire, asphyxia may be produced either by carbonic acid or carbonic oxide.

The former gas having a powerful affinity for ammonia, we may succeed in removing a portion of it from the lungs by means of that alkali; but if asphyxia be caused by carbonic oxide, ammonia would act only as a stimulant, but not as an antidote. In that case, Dr. Marshall Hall's valuable process for restoring suspended animation might, in all probability, be advantageously adopted.

Some years since, I had an opportunity of trying ammonia in a case of asphyxia caused by exposure to the fumes of ignited charcoal. A baker had been engaged for some hours in his bakehouse over a charcoal fire, and fell down suddenly in a state of insensibility. I was sent for, and hearing the nature of the case, procured a bottle of dilute solution of ammonia, free from carbonic acid of course. On my arrival, I found a man about twenty-seven years of age stretched upon his back, quite insensible; countenance pale, and somewhat shrunk. I poured a little of the ammonia on his tongue, and applied it to his nostrils. In less than a minute, he jumped up like one suddenly roused from a sound sleep, walked a few yards up the passage, and then fell back with a dead weight in the same state as I found him. I applied the ammonia as before, and he rallied again, but went off the third time, and afterwards recovered with no other treatment than the ammonial, and a little cold water which I gave him to drink.

In this case, no twitchings of the muscles were observable, and there was no irritation about the glottis exciting cough. When carbonic acid gas is disengaged from a lime-kiln, I believe no irritation of the glottis takes place, but a sense of oppression about the chest; and that arising from a charcoal fire causes constriction across the forehead, or a sensation of dryness about the throat—at least such are the early symptoms observed. But whenever I have accidentally inhaled carbonic acid disengaged from chalk by means of an acid, irritation of the glottis and cough are instantly produced. It would appear, then, that carbonic acid gas acts as an irritant in the cold state, but when its temperature is raised, no irritation is produced, thus rendering it more insidious.

This hypothesis may perhaps be applied to those who are subject to bronchitis, &c.: the cold carbonic acid contained in the atmosphere excites cough by respiring through the mouth, instead of through the nose. Nature has placed the nose in that position which causes the atmospheric air to absorb caloric before it reaches the delicate air passages, but persons are apt to use the mouth instead of the nose for respiration, forgetting that the latter, and not the former, is the chimney for the lungs; hence the necessity of wearing respirators!

In cases of emphysema, we have carbonic acid accumulated in dilated bronchial tubes or air cells, producing no particular inconvenience while it remains in a quiescent state, but as soon as it begins to permeate the tissue in which it is enclosed, or make its escape through the natural outlet, dyspnœa may, in my opinion, be then partly attributable to the action of the excess of carbonic acid upon the muscles of the bronchi, similar to that which takes place upon the muscles of the glottis by inhalation.

Gases permeate all the tissues of the body; but according to Liebig, the gases of the stomach and intestines are not absorbed by the lymphatics or absorbents, but when their volume exceeds a certain point, they quit their position. Hence we may infer, that the gas contained in the dilated air-tubes cannot remain stagnant for any length of time, being constantly subjected to pressure, especially, during every increased respiratory effort, when permeation would necessarily take place. Carbonic acid is always present in the intestines, and here it may act as a natural stimulant in defecation, but an excess of it may probably act as an irritant on the muscular coats, causing undue contraction, or dilatation by pressure, when constipation is present.

Of all the gases which are generated in the intestines, sulphuretted hydrogen is the most formidable the medical practitioner has to contend against. It is said to be always present in the small intestines, but this I doubt; in the colon, however, it is generally present in a gaseous state, or in combination with ammonia, forming a highly poisonous liquid gas. In this form, it is liable to be taken up by the blood vessels even when diarrhœa is present, but in the gaseous state constipation may be necessary for fermentation.

I have endeavoured to prove, by watching my patients, what symptoms would indicate the absorption of this gas in the blood, and by contrasting symptoms produced by inhalation through the lungs, I have often come to the conclusion, that great prostration, throbbing of the temples, a state of drowsiness, &c., may sometimes lead us to suspect what is taking place. The antidotes are calomel or nitric acid. The organic salts and alkalies appear to favour, while the sulphates seem to retard, the absorption of the gas—judging, however, from observation of symptoms and experiments by testing the motions.—*Lancet, April* 4, 1857, *p.* 342.

192.—*Alleged Cure for Sea Sickness.*—Dr. Landerer, at Athens' announces that he has discovered a sovereign specific against sea sickness. His remedy is to give from ten to twelve drops of chloroform in water. The chloroform in most cases removes nausea, and persons who have taken the remedy soon become able to stand up, and get accustomed to the movements of the vessel. Should the sickness return, a fresh dose is to be taken. It was tried on twenty passengers on a very rough voyage from Zea to Athens, and all, with the exception of two, were cured by one dose. The minority, two ladies, were able to resist the feeling of illness on taking a second dose.—*(Galignani's Messenger.)—British Med. Journal, Jan.* 10, 1857, *p.* 29.

193.—*On Coffee.*—The English people generally are entirely at fault in their treatment of the coffee-berry. In this country the raw berry is sent by the grocer to the roaster; from him it is returned to the grocer; after being kept for some time, often for a considerable period, it is sold, either whole or ground, to the public; by the consumer, again, it is kept, often enclosed in paper only, for a further time, so that weeks frequently elapse after the roasting of the berry, before it comes to be made into coffee, during which it loses the greater part of its fragrance. This course of proceeding is opposed to the plainest reason; it is also entirely at variance with the practice pursued on the Continent, where the consumption of coffee is so great as to supersede, to a considerable extent, the use of tea. There, usually, the coffee-berry is roasted, ground, and infused the same day, the beverage retaining all the aromatic and other properties of the berry in a high degree.

What is required, then, before we can have good coffee in this country is, that its roasting and grinding should be taken out of the hands of the grocer, and that these processes be performed at home. Great pains are bestowed upon the cooking of our dinners; let a little of the same care be bestowed upon the preparation of coffee; the satisfactory character of the result will more than repay the slight outlay of time and trouble. There is no special art or mystery in the roasting of the coffee-berry; it is commonly roasted in households in France and Germany, by means of a small domestic coffee-roaster, and ought to be so in this country. Until this is done, Great Britain will never be a coffee-drinking country.—*Lancet, Feb.* 21, 1857, *p.* 197.

194.—*Agreeable Mode of taking Senna.*—Dr. Linthner says, that senna leaves (one or two drachms to one or two cups of water) should be allowed to infuse all night in cold water. With the strained infusion coffee is prepared next morning, as if with water; and an aperient which does not taste of senna, and does not cause griping is thus produced.—*Buchner's Repert.—Med. Times and Gazette, Dec.* 20, 1856, *p.* 629.

195.—*Honey as an Excipient for Pills.*—M. Thibault believes that much of the disappointment following the employment of pills arises from their, as ordinarily prepared, acquiring a degree of induration that prevents their solution, and enables them to traverse the alimentary canal unchanged. To prevent this he recommends the employment of honey; pills prepared with it always remaining soft, however long they may be kept.—*Bulletin de Thérapeutique.—Med. Times and Gazette, March* 14, 1857, *p.* 269.

196.—*On the Cause of the Fluidity of the Blood.* By Dr. B. W. Richardson.—This essay has recently obtained the Astley Cooper Triennial Prize. The author says that he has discovered that *ammo-*

nia is a constituent of the blood, and that on its presence the solubility of fibrin, and therefore the fluidity of the blood, is dependent. The numerous experiments of the author may be thus briefly classified:—1. By causing the vapour arising from coagulating blood to pass through another quantity of blood, drawn as nearly as possible at the same time, and from the same animal, the coagulation of the latter is suspended so long as the current of vapour is kept up. 2. By driving the vapour of coagulating blood into pure hydrochloric acid, and afterwards treating with chloride of platinum, the characteristic yellow crystals of ammonio-chloride of platinum are procurable. 3. On collecting a large quantity of freshly-drawn blood in a wide-mouthed jar, and placing over it a cover, to the interior of which is fixed a slip of glass moistened with hydrochloric acid, the glass becomes covered with microscopic crystals of chloride of ammonium. 4. If fibrin removed from blood be carefully dissolved in a weak solution of ammonia, and again added to the serum and red particles, coagulation may be induced.

The result arrived at was, that the phenomenon of coagulation depends essentially on the evolution of ammonia from the blood, and this gives an explanation of the modifications observed in the process of coagulation under various physical conditions. Dr. Richardson has further pointed out that ammonia in combination with carbonic acid gas is a constant constituent of expired air. The presence of ammonia in the animal economy, and its evolution in respiration, is of interest, as connecting more closely the link that exists between the animal and vegetable worlds, but chiefly on account of its importance in relation to the causes, the nature, and the treatment of various diseases.—*Dublin Hosp. Gazette, Oct.* 1, 1856, *p.* 264.

197.—*Issue-Making.*—Cut a hole of the required size and shape in a piece of leather previously spread with adhesive plaster, and apply it to the part in which he wishes to insert the issue.

Next, introduce into the hole, pulverized *potassa cum calce*, in quantity sufficient to cover the skin; and then drop upon the powder spirits of wine sufficient to dissolve it (two or three drops will be enough); this done, cover the hole with another piece of the same plaster, large enough to project some distance beyond its margin, and leave it so for 24 hours.

At next visit, the entire may be removed, and you will then find a slough of the proper size, slightly depressed, of a brown colour; in short, just such a slough as the *kali purum*, rubbed to the part in the ordinary way, would have produced.

For many years I have been in the constant habit of making issues after this fashion; and as it appears to me with the following advantages over the common method:—

1st. It is a much less painful proceeding than the ordinary method; few patients suffer much from it, and none of them complain of the torture which an ordinary caustic issue inflicts.

2ndly. It is an exceedingly expeditious plan. In hospital practice an assistant has every thing prepared previous to the visit, and the issue is made in a surprisingly short space of time.

3rdly. It is, in my experience, much more efficacious than an issue put in by incision, as recommended lately by one of your correspondents.

From what cause it may be, I cannot pretend to say, but the *potassa cum calce* in powder, varies somewhat in strength in the shops, and therefore I am careful, in using a new specimen for the first time, to commence with a thin stratum of the powder. If the phial be fitted with a ground glass stopper, and kept in a dry place, the same powder will last for years; if exposed to the influence of the atmosphere, however, being highly hygrometric, it soon becomes unfit for use.

I learned this method of issue-making many years ago from an esteemed medical friend, who resides at Pau, and who assured me that it was very commonly practiced by the French.—*Dublin Hospital Gazette, Feb.* 15, 1857, *p.* 63.

198.—*Kreuznach Water.*—[During the summer of 1854, Dr. Thompson visited Kreuznach for the express purpose of gaining information respecting the power of its waters, in promoting the absorption of fibrous tumours of the womb, but especially as bearing upon prostatic enlargement. As the result of this visit he says,]

I was unhesitatingly assured by Dr. Oscar Prieger, in answer to my inquiries, that he had no reason to believe that the Kreuznach waters, whether employed on the spot or elsewhere, exercised the power of removing undoubted fibrous tumour; although his constant experience gave him great confidence in their efficacy in diminishing general hypertrophies of the uterus, that is, those not affecting an isolated form or independent growth. This statement may perhaps be deemed of some interest in connexion with the recorded opinions of Drs. West and Oldham, with which it so completely harmonises: and it is especially apposite to the subject as coming from Dr. Prieger, who, while kindly affording me opportunities of acquiring information, was far from making for the "brunnen" of the district any of those comprehensive claims to the possession of extraordinary therapeutic power, which are sometimes met with in connexion with mineral springs.—*Med. Times and Gazette, Feb.* 28, 1857, *p.* 226.

199.—ON CIRCUMSTANCES MODIFYING THE QUANTITY OF AIR INSPIRED, AND ON THE TEMPERATURE OF THE BODY.

[Dr. E. SMITH, Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, in a paper read before the Royal Society, remarks]

In reference to food, the most interesting facts were, that whilst all fats and pure starch decrease respiration, sugar largely increases it; and that albumen, gelatin, milk, and all ordinary nitrogenous diet, increase it to a moderate degree only. Also, that whilst brandy, wine, and kirchenwasser greatly decrease respiration, rum largely increases it. Ammonia gave opposite results, according to the preparation and dose, which accounted for the difference of opinion as to its influence. The author was assured of the correctness of Dr. Billing's assertion, that ammonia may be a sedative, and, moreover, that it is a most powerful one. Certain agents, as digitalis, had a contrary action during their influence, first to increase, and then to decrease, respiration. The most powerful respiratory excitants were, ether, tea, and sugar; and the most powerful depressants were, some preparations of ammonia, opium, morphia, tartarized antimony, kirchenwasser, and sleep; and these, with salines, which have the same action, are the common antiphlogistic and febrifuge remedies. Sunlight increased, darkness decreased, respiration; heat increased, and cold decreased, respiration, when the difference was considerable; cold applied to the skin increased, but cold air inspired decreased, respiration.

[Dr. THEOPHILUS THOMPSON said]

The observation of the author, that sugar increased the amount of respiration, was certainly opposed to the opinion he (Dr. Thompson) had been induced to form from other experiments, particularly those made a few years since by Dr. Böcker, of Bonn, who, when varying his diet by the addition of two ounces of sugar daily, found the carbonic acid exhaled from his lungs reduced by about one-tenth. Similar results had also occurred under the use of diluted alcohol, and of various alcoholic drinks. Brandy, beer, white Rhenish wine, and still more red Burgundy, occasioned a reduction in the quantity of carbonic acid expired; the average reduction being, probably, about a fifth. Tea, in Dr. Böcker's experiments, did not materially influence the respiratory combustion, but it acted like alcoholic drinks as respected the reduction of earthy phosphates in the urine—a result more observable under the alcoholic experiments, and most of all from the use of sugar, by which the earthy phosphates were reduced one-half; the general conclusion being, that all these agents tended to arrest the metamorphosis of tissue, and thus to enable us to do with a less amount of ordinary food. It would thus appear that Dr. Smith's experiments, except in the case of brandy and, to a certain extent, tea, was not in harmony with the statements of Böcker; for although the quantity of respiration had not necessarily an exact relation to the carbonic acid exhaled, it was reasonable to expect these conditions to increase or diminish together. He (Dr. Thompson) mentioned these points, not as throwing doubts on the experiments of the author, but as proving the necessity for further inquiry. Observations made with such care and zeal were of peculiar value in inquiries not merely affecting the restoration of the sick, but illustrating agencies important to the whole community, because affecting, moment by moment, the comfort and efficiency of persons in health.

Prof. SHARPEY bore testimony to the careful precautions and patient labour with which the author's experiments had been made, as peculiarly calculated to lead to trustworthy results. It was a curious circumstance that brandy and rum should act differently on the respiration—the former decreasing, the latter increasing it. He (Dr. Sharpey) agreed with the opinion expressed by Dr. Thompson, that with increase of respiration, an increase of carbonic acid must be expected, although not necessarily proportional. The inquiry instituted opened questions of remarkable interest. The different amount of respiration in men and women was curious. Andal and Gavarret, for example, had observed that the amount of respiration in women, particularly after puberty, was much less than that of men. Dr. Smith's remarks on the influence of light confirmed those of other investigators. Frogs had been observed to have their respiration increased by this agent. He (Dr. Sharpey) believed not only through its influence on the skin, but probably also through the medium of the eye. He considered that the harmony between the author's results and those obtained by the best previous observers was evidence of their truthfulness.

[Dr. CARPENTER observed that he knew of instances in which persons were affected with laborious and distressing breathing if the candle was extinguished during their sleep. This may favour the opinion that light, under ordinary conditions, has some effect as a stimulus to the reflex actions concerned in respiration.]—*Lancet, May* 9, 1857, *p.* 481.

200.—*Experimental Researches on Animal Temperature.* By M. CLAUDE BERNARD.—M. Claude Bernard has addressed two interesting Memoirs to the Académie des Sciences upon this subject, and the following are the conclusions he has arrived at:—1. The digestive apparatus imparts constant heat to the blood, in such a manner that the venous blood is warmer in this apparatus than the arterial. 2. The blood which leaves the digestive apparatus by the hepatic veins is a constant source of the calorification of the blood that proceeds to the heart by the vena cava inferior. We may even add, that it is the principal source; for nowhere in the circulatory system is the blood so warm as in the hepatic veins; and our tables show, that in the most vigorous animals this temperature may attain to 41·6° centigrade. 3. Among the organs which contribute to the calorification of the blood in the digestive apparatus, the liver occupies the first rank; whence it results that this organ must be regarded as one of the principal sources of animal heat. 4. The circulation of the blood through the lungs is a cause of the cooling of this fluid. 5. We must not thenceforward regard the lungs as a source of animal heat. 6. The transformation of venous into arterial blood, in the living animal, is not coincident with an increase of heat in this fluid, but with a diminution of temperature.—*Med. Times and Gazette, Nov.* 22, 1856, *p.* 527.

201.—*Datura Tatula.*—At a meeting of the Medical Society of London, Dr. Semple exhibited a plant of the Datura Tatula, of an arborescent form, and nearly six feet high. He was anxious to draw attention to the fact, that stramonium, which is known in certain cases to exercise a very powerful influence upon the system, has fallen almost into disuse, owing to the uncertainty of its operation. This is probably due to the fact, that the specimens of stramonium used in medicine are obtained from different species of *Datura*, and he was assured that the *Datura tatula*, the plant now exhibited, yielded a very powerful and efficacious medicine, while the *Datura stramonium*, the indigenous weed of our own country, which is a small and humble herbaceous plant, possesses very little therapeutic action. Dr. Semple exhibited some cigars, made of the leaves of *Datura tatula*, prepared by Mr. Savory.—*Lancet, Nov.* 1, 1856, *p.* 489.

202.—ON FREQUENT MICTURITION.

By Dr. G. Owen Rees, Guy's Hospital.

[Among the causes of frequent micturition is renal calculus. In this distressing affection little or nothing can be done. To the patient's own feelings the bladder is often the seat of the disease, and even by medical men these cases have been mistaken for irritation of the neck of the bladder caused by stricture, and the most lamentable results brought about by the violent measures resorted to for relief. A correct diagnosis may however generally be formed.]

Frequent micturition, with small quantities of pus in the urine, loin pain, and lassitude, if we have an early history of hæmaturia, should guide us to diagnose renal calculus; and even if frequent micturition and a small quantity of pus be the only symptoms, we shall generally be right in giving the above opinion, even if history fail to afford us evidence of hæmaturia. The presence of a small quantity of pus in the urine would appear easily explained in its relations to renal calculus.

The hollowing out of the nephritic structure, which we find occurring in order to make room for calculi about to become encysted in kidneys, must have been effected by a gradual process of disintegration, and this we know is preceded by inflammation. The purulent discharge would thus seem to attend the formation of a convenient cavity for the lodgment of the calculus. So long as this action is going on, the patient will pass pus in the urine, and it may be some years before matters are adjusted. The constitution has much to go through. A scrofulous taint leads to abscess in the kidney and death. The more fortunately constituted generally do well, provided they can be induced to avoid the catheter and the sound.

In speaking of the condition of the urine in this calculous affection of the kidney, I have made use of a somewhat indefinite expression—viz., "a small quantity of pus." By this I would wish my readers to understand an urine depositing a yellowish white sediment, but not in such quantity that the patient's attention need be attracted by it. It renders the urine but slightly turbid as it is passed, or when the deposit is shaken up in it.

This is the general state of things when nephritic calculus is encysting, or when it fails to find its way down the ureter, provided constitutional causes do not interfere to produce suppurative disease which may appear in the form of pyelitis or of general abscess of the kidney. This purulent impregnation is constant, and if it fail to show itself, so as to be evident to the unassisted eye, the microscope rarely fails to demonstrate the presence of pus so long as the bladder is irritable.

There is a cause for frequent micturition so nearly connected in its symptoms with that last noticed, that it naturally suggests itself in this place. It consists in a state of kidney known as strumous kidney, or phthisical kidney, as some authors have designated it. If calculous disease develop itself in a strumous subject, we find very early that abscess results, but in all subjects some amount of pus may be expected during the time of encysting. In phthisis of the kidney, however, the bladder becomes irritable, without any evidence of a calculous disposition; and we find that pus can be clearly proved in the urine. The symptoms are generally at first considered to depend on calculus, and it too often happens that the disease has made great progress before the real state of the case becomes evident. The symptoms are at first nearly identical with those of nephritic calculus. The same degree of sharp lumbar pain, however, is not present, and there is no history of hæmaturia; but the symptoms presenting themselves at the time of examination bear a striking similarity; and if the previous history be not ascertained, a diagnosis is next to impossible. It is both for the advantage of the practitioner and of the patient that this distinction should be early made; for if calculus be the exciting cause, of course our prognosis will be more favourable.

The two points for consideration are—1st. The diathesis of the patient. 2nd. The history as to hæmaturia. If frequent micturition and purulent urine, such as I have described, be present in a strumous person, and we have no history of hæmaturia, we may diagnose phthisis of the kidney. If frequent micturition and purulent urine coexist with a history of hæmaturia, then, in all probability, there is calculus. We must not conclude, however, that because calculus is present we have no fear of the worst results, for if the patient be of strumous habit, abscess may result as a consequence. In all cases, however, the history of hæmaturia is an advantage, inasmuch as even should the patient be strumous, the calculus may be voided, and the exciting cause of mischief being thus removed, the kidney may recover itself, and the patient do well.

It is not many months ago that I saw a remarkable strong young man suffering from loin pains and general malaise, in whose urine small quantities of pus were nearly always present. The case interested me much, and I looked with some anxiety for the previous history. There was a strumous diathesis; and, from the moment I made my examination, I felt certain that all depended on the history involving hæmaturia or not. In any case, the strumous diathesis made it a serious affair; but, in the absence of hæmaturia. the only conclusion which could be arrived at was that the nephritic mischief had resulted purely from struma. As phthisis of the kidney progresses, we may have enormous quantities of pus evacuated. It is only, therefore, to the commencement of the disease that my remarks apply; when, with frequent micturition, we have the slightly purulent secretion simulating calculous mischief.

Amongst causes for frequent micturition, we find diabetes enumerated, and it certainly may become a symptom of the disease. The quantity passed on each occasion is, however, so large compared with that characterizing most of the other states I have described, that the patient's attention is attracted by the large discharge, as well as by the frequent call, and the former is related as the more prominent symptom. This should lead at once to the examination of the urine for sugar, and if that be *not* found, we may perhaps determine the presence of insipid diabetes by the low specific gravity, the increased flow, great thirst, and other characteristic symptoms. It does, however, now and then happen in diabetes, that frequent call to pass urine has been the symptom most noticed by the patient, and then if due care be not taken, the practitioner is a long time led astray. Cases such as these by no means infrequently occur. They are sometimes treated as dependent on the gouty diathesis, an uric acid deposit having attracted the attention of the medical attendant. Treatment is then persevered in until all the more aggravated symptoms of diabetes appear. The early detection of this disease, which is so important for its relief, is thus prevented.

I now have to speak of two forms of cancerous affection which may produce frequent micturition—viz., malignant disease of the kidney and of the bladder. These two states are characterized by hæmaturia. It sometimes happens that the irritability of the bladder is so great when the kidney alone is involved, that this sympathetic affection may be mistaken for the primary disease, and the nephritic mischief entirely overlooked. What I would wish to enforce is, that these two symptoms, hematuria and frequent micturition, taken together, should be regarded (the prostate being excluded) as indicating calculus or malignant disease, and that either the kidney or the bladder may be in fault. The indications of cystitis, shown by the urine when calculus exists, have been already dwelt upon; but when malignant disease is present, there may be none of these. The urine may be clear, or may only contain such a small quantity of blood that very careful examination is requisite in order to detect it by the naked eye. Here the kidney might be considered in fault, and the diagnosis is not always to be made.

If we have a tumour of the abdomen over the region of the kidney, then we may safely diagnose that organ involved; but this indication is not always afforded us, and then we should examine the bladder very carefully. If, on sounding, hemorrhage occur to an extent exceeding that usually produced by exploration, there is most likely a growth on the mucous surface of the bladder.

Before leaving this part of my subject, I must say a word or two respecting the seat of tumour in these forms of disease. First, with regard to the kidney. It is necessary to guard against being led astray by the tumour appearing in a position somewhat removed from that in which it ordinarily exists. Nephritic enlargement sometimes occurs at the upper portion of a kidney, and in abscess of the organ especially, there is often considerable bulging upwards. This may occur to such an extent that the tumour eventually may be felt in that part of the abdomen usually occupied by the liver, and in malignant affections also, if the right kidney be involved, the tumour may exist over nearly the whole of the right hypochondriac region. An able paper will be found in the "Guy's Hospital Reports," in which Dr. Bright has given sketches illustrative of this fact.

As regards the production of frequent micturition by malignant disease of the bladder, the tumour must be situated near the neck of the organ in order to cause the symptom. I have had two cases within the last few years especially illustrative of this point. In the one, so little inconvenience was felt that had it not been for the microscopical indications of the urine, I should have inevitably mistaken the disease. There was no increased desire to pass urine, and no pain; and hæmaturia was only an occasional symptom. Post-mortem examination showed the advantage to be derived from microscopic research, the diagnosis being verified by the presence of a large mass of villous growth on the fundus of the bladder. The situation of the tumour, far removed from the neck of the organ, explained the absence of the symptom of frequent micturition. In the other case, a tumour of the same kind existed near the neck of the bladder, and the irritation was most torturing. The symptoms otherwise exactly resembled those of the former case. There was the same hemorrhage after sounding, and hæmaturia was of very frequent occurrence. I have spoken of certain microscopical appearances which determined my diagnosis: these were merely such as I have detailed in former lectures, consisting in the presence of those corpuscles or cells which are found in the villous growths from mucous membranes, and which, when they can be satisfactorily determined to exist in the urine, are always most significant.

It has not yet fallen to my lot to demonstrate the presence of any peculiar structures when the kidney alone has been affected; but the subject is somewhat novel, and it is far too early to propose the discovery of such cells as a positive proof that the bladder, and not the kidney, must necessarily be the part involved in the disease.

Before leaving the analytical symptomatology of frequent micturition, I would speak of the influence of habit and of nervousness in continuing the symptom, even after the obvious causes producing it are removed. With regard to habit, it is in some cases of the greatest importance to inform the patient of his position, and instruct him to restrain himself as much as possible. If he will do this, his malady becomes of necessity of shorter duration. We often find the subjects of this symptom acquainted with every corner suitable for the relief of their wants. They are reminded of their malady on approaching their wonted haunts. An effort is required to pass them, and it is well to instruct such patients to make a point of doing so if they possibly can. The nervous feeling which arises in sufferers from this infirmity when they find themselves in company is very distressing. They are certain to feel the inclination when there is the greatest difficulty in gratifying it. They consequently refuse to go into society. They are, perhaps, urged to do so; they suffer great misery, and their complaint becomes aggravated. This should never be allowed. Let them avoid company, and as their complaint improves they get more courage; and there is no fear of a return of this nervousness, except they again become the subjects of those physical ailments which originated the disease.—*Lancet, May* 9, 1857, *p.* 469.

203.—ON UNUNITED FRACTURE.

By Professor Syme, Edinburgh.

There are few results of surgical practice so distressing and embarrassing as imperfections in the osseous union of a broken bone, since, in general, so long as this condition continues to exist, the limb concerned is rendered nearly if not entirely useless, while the means of remedy hitherto employed have proved uncertain of good, and sometimes even productive of bad effects. When there is merely a slight degree of mobility at the seat of injury, so that, although quite sufficient to prevent any useful exercise of the limb, it may require some care for its detection, there will be a favourable prospect of success, even after the expiry of several months, through the employment of means for the complete prevention of motion; and I have put upon record cases in which even the thigh-bone was rendered perfectly rigid by this simple expedient, in circumstances of apparently a very hopeless character, from the long duration of flexibility. But when the extremities of the bone remain quite separate, or even everlap each other, and are surrounded by a sort of fibrous capsule with cellular interstices, so that they admit of hardly less free motion than if there really were a joint between them, it is evident that merely preventing motion could not possibly prove sufficient for the production of an osseous union. It has been supposed, that the difficulty thus presented might be overcome by rubbing the ends of the bones together; by stirring up the texture connecting them through the agency of needles or tenotomy knives; by passing setons through the flexible medium of union; and by inserting pegs of ivory into the respective osseous surfaces. But, so far as I am able to form an opinion on the subject, all of these means are absolutely useless, and owe any share of credit that they may have acquired to the prevention of mobility which is conjoined with their employment. In short, I believe that the procedures in question cannot accomplish recovery in any case not remediable by the enforcement of rest, and that they, consequently, must always be useless, if not injurious. There is still another mode of treatment, which consists of cutting off the ends of the bone, so as to obtain two fresh osseous surfaces, and place the limb in a condition similar to that of a compound fracture recently inflicted; and this, I feel persuaded, affords the only reasonable ground for expecting success in cases not amenable to the influence of immobility. It is true that the experience of this method has not hitherto been at all satisfactory, through want of due attention to some circumstances in the mode of procedure, which must in a great measure determine the result. Of these may be specially mentioned an imperfect removal of the ends of the bone, and a want of complete immobility after the operation. The following case will, I hope, tend to illustrate the importance of attending to these points.

J. H., æt. 34, a private of the —— foot, while discharging some duty in the Redan, on the 8th of December 1855, after the occupation of Sebastopol, was blown up by a Russian mine, which had escaped detection, and, in addition to some slighter injuries, sustained a fracture of the left arm between two and three inches above the elbow. He walked up to his regimental Hospital, where splints were applied, and retained for a month, when, there being no signs of union, the ends of the bone were rubbed together, and supported by a starched bandage. He left the Crimea on the 3rd of February, and was sent to the hospital at Renkeioi, where a seton was passed through the seat of fracture, and retained for five weeks without any benefit. On the 20th of May he proceeded homewards, and, after a long voyage of nearly two months, arrived at Portsmouth, whence he was transferred to Chatham on the 17th of July. No attempt to restore rigidity was made there, and at the end of two months he was dismissed the service, with a pension of one shilling per day, in consideration of his disability, which was regarded as equal to the loss of a limb.

In the hope that relief might still be afforded, he applied to me on the 22nd of January last, nearly fourteen months from the date of the injury; and finding that the arm was entirely useless through the extreme mobility of the ends of the bone, which overlapped each other to the extent of more than an inch, I resolved to adopt the only procedure that, in my opinion, afforded any reasonable prospect of remedy under such circumstances, which was to remove the ends of the bone, and afterwards maintain the most perfect rest. In preventing the motion of a joint, it is a most important principle, never to be forgotten, that as most of the muscles pass over two articulations, it is impossible to keep any one perfectly quiet without placing the whole limb under restraint. Proceeding under this impression, my first step was to have the arm put in an easy position, with the elbow bent at a right angle, and then covered from beyond the shoulder to the tips of the fingers with pasteboard and starched bandages, so as to form a case, which, when it became dry, effectually prevented the slightest movement in any of the joints. This case was next cut up on one side from end to end, so as to allow the arm to be taken out of it, and undergo the requisite operation, which was performed under chloroform. An incision having been made along the outer edge of the triceps, I exposed the upper end of the bone, and sawed off a portion of it sufficient for obtaining a complete osseous surface. The lower end, lying anterior to the shaft in a sort of capsule, could not be subjected to the saw, but was removed, to the extent of more than an inch, by cutting pliers. The arm was then supported by a couple of splints, and the patient lay quietly in bed for a fortnight, when the limb was placed in its pasteboard case, in which an aperture had been made over the wound, then nearly healed, and discharging a very little matter that soon ceased entirely. The patient, feeling that the slightest motion was impossible, even if he had wished it, was relieved from any further restraint, and no longer remained in bed. At the end of a month, or altogether six weeks from the date of the operation, which was performed on the 30th of January, the limb was examined, and found to be quite straight, with a firm osseous union; so that the patient was able to leave the hospital, not only with his comfortable pension, but also with a perfectly useful arm.—*Edin. Med. Journal, May* 1857, *p*. 969.

204.—THE CHOLERA WEATHER.

By J. A. Hingeston, Esq., Brighton.

In the cholera epidemics of 1849 and 1854, the mortality reached its maximum in the second week of September. "In both irruptions," says the Registrar-General, in his return for the week ending September 16th, 1854, p. 357, "the mortality was the highest on nearly the same days of September, and its decline commenced in the corresponding week." In the corresponding week of the present year, the Registrar-General, in his return for the week ending September 13th, 1856, reports that four deaths are returned as caused by cholera in London, two of which are those of infants, and two of women aged respectively 42 and 81 years. So that there were four deaths from this disease in the second week of September in 1856, while there were 2,050 deaths in the corresponding week of the same month in 1854. What is the cause of this difference?

Concerning the weather of 1854, the Registrar-General reports for the week ending September 9th, p. 325: "The sun has great power, but clouds and fogs have intervened; no rain has fallen; the wind has been very dry and languid; the electricity positive," &c. Let us compare this report with that for the corresponding week of the present year. The Registrar-General, in his weekly return of the meteorological observations taken at the Royal Observatory, Greenwich, under the superintendence of the Astronomer Royal, p. 296, reports the temperature as being 1 deg. below the average; in 1854, it was above it. The movement of the air in 1856, as being denoted by the figures 420, while in 1854 it was only 195; the rain as being 0·09 in 1856, while in 1854 it was 0·00, or zero; the sky in 1856 as being variable with thunder-storms and rain-clouds, but, on the contrary, monotonous and motionless in 1854; and the electricity, which was positive but weak in 1854, as being both active and positive, with strong tension and volleys of sparks in 1856. Now, no contrast can be greater than this, and yet this is not all; for the barometer furnishes a still stranger contrast than anything else. For the six weeks extending between August 26th and September 30th, 1854, in the Registrar-General's returns of the meteorology at Greenwich, the barometer is quoted at 29·915 in., 30·202 in., and 30·166 in., when the disease had reached its height; and at 29·857 in., 29·972 in., and 30·076 in., when the epidemic was declining; giving a mean height of 30·031 in., according to Mr. Glaisher's computation, quoted in the Registrar-General's Quarterly Return for July, August, and September, 1854, page 30. On comparing the corresponding six weeks extending between August 23rd and September 27th of the present year 1856, the barometer is quoted at 29·472 in., 29·821 in., 29·847 in., 29·852 in., 29·905 in., and 29·241 in., according to the several weekly returns of the meteorology at Greenwich, giving a mean height of no more than 29·591 in. The contrast presented by these numerals is so self-evident that it requires neither remark nor comment, since it speaks for itself; it is, in short, the difference of nearly an inch in the height of the mercurial column.

It may be objected that this is pressing the value of figures too far, and playing with arithmetic for the purpose of enunciating a favourite opinion of one's own. But they, who have recorded the foregoing observations on the weather, and returned them in their reports, have been entirely uninfluenced by any preconceived notions on the subject. Their statistics are official data stamped with the seal of public authority and credit, and as documentary evidence they are of the highest value, if not entirely incontestable.

In an article published in the 'Association Journal,' for the week ending August 2nd, 1856, I ventured to predict that there was this year "no doubt of our liability to another outbreak of the pest, but should the wind continue to blow from the west, instead of from the north-west or north-east, with plenty of rain, we might escape it; but should the northerly winds prevail, with a drought, and a dull sky, we might now surely prepare ourselves for another irruption of it." What I predicted has literally come to pass. The atmospheric conditions peculiar to the prevalence of Asiatic cholera have been absent, and the disease has been absent also. In March and June, the atmospheric conditions were present for a short time, and so was the disease. The atmosphere changed for the better, and the disease ceased. Allowing for these two slight exceptions in June and March, the weather has been just the reverse of the cholera atmosphere. Instead of a drought, there has been rain; instead of a calm, frequent storms of wind; instead of an overcast sky, white cumuli on the alert throughout the summer. September 1854, was almost devoid of rain. Sept. 1856, has been very wet. Above all, instead of a barometer obstinately fixed at 30 inches, it has, on the contrary, been fluctuating between 30·120 and 28·520 inches. If the movement of the air was represented by the figures 195 in 1854, it has, in 1856, ranged between 420 and 1020; or, the movement of the air has been five times as rapid in 1856 as it was in 1854.

Another singular feature in the history of this plague is the one which is being slowly brought to light respecting the most successful treatment of it. The weight of testimony decidedly preponderates in favour of the mercurial treatment. It brings us back to the old and acknowledged system of therapeutics, and strips the disease of much of its anomalous and mysterious character. In its early stages, the mercurial treatment, judiciously employed, seems altogether successful while even in its last and worst stage, the greater number of cures seemed to be justly attributable to its prompt employment. This practice corresponds with that which we heard so much of from India, before we became acquainted with the disease in this country, and gives us a clue to its pathology, which is akin to that of congestive inflammation, arising from contaminated blood.—*Assoc. Med. Journal, Oct.* 18, 1856, *p.* 889.

205.—ON THE EXCITO-SECRETORY SUB-SYSTEM OF NERVES.

By Dr. Marshall Hall.

In a memoir read at the Royal Society in Feb. 1837, I announced the existence of an *Excito-motory System of Nerves.*

I believe I may now announce a system or sub-system of *Excito-secretory Nerves.* not less extensive.

As in the former case the pneumogastric was shown to be the principal, though not the only, internal *excito-motor* nerve, so in the present instance that nerve will be shown to be the principal, though by no means the only, internal *excito-secretory* nerve.

The external excitor nerves, in both cases, are the trifacial and the cutaneous spinal.

All of these nerves are chiefly centripetal in their course and action; all act *diastaltically* through the *spinal marrow*, (the medulla oblongata and the medulla spinalis inclusive,) as the centre or key-stone of all the cycloidal nervous *arcs* of the system; and all act through the *ganglionic* system as presenting the *centrifugal* nerves or portions of those arcs, the immediate secretory nerve, but excited into action by a remoter, *centripetal* nerve.

Henceforth the Diastaltic Nervous System must be divided into TWO sub-systems:

I. *The Excito-motory;*

II. *The Excito-secretory.*.

The former is extended to the entire muscular system; the latter is diffused over the general system as the blood is diffused over the system. Every capillary, or methæmatous, or blood-changing vessel, has its element of the excito-secretory system, the nervous mathæmatous agent in every such change. The blood moves in *circles;* the excito-secretory sub-system acts in *cycloidal arcs.*

I proceed to give examples:

"Every one," says M. Brown-Séquard, "knows the singular alterations which take place in the *eye* after a contusion of the *frontal* nerve. or a section of the *trigeminal* or of the *cervical ganglionic* nerves." "I have found," adds this eminent physiologist, "that after the section of a lateral half of the spinal cord, it sometimes happens that the *eye* on the same side will present strange and various changes. The part of the cord having this influence on the eye lies between the *ninth* and the *twelfth* costal vertebræ."

But *why* this same or similar effect from such various sources, no conjecture has hitherto been given. Yet, I think, every reader will at once perceive, when the fact is pointed out, that the trifacial nerve, the costal spinal marrow, and the ganglionic nerve, are but the centripetal, the central, the centrifugal, portions of *one* continuous cycloidal methæmatous arc, and that it is to a certain degree immaterial in *what* point of this arc the section is made.

The pneumogastric nerve has been the enigma of experimental physiologists. It would be too long for me, on the present occasion, even to enumerate their varied and contradictory conclusions. I shall therefore only briefly state certain ultimate facts which have resulted from these multifarious investigations:—

First, then, according to Dr. J. Reid, no effect on the lung is "necessarily or even generally" produced by the division of ONE pneumogastric nerve, and the animal survives the operation.

Secondly, Dr. J. Reid observes: "Section of the pneumogastrics" (that is, of *both* pneumogastrics) "invariably proves fatal, if the cut ends of the nerves are kept apart." And, "The section of these nerves proves fatal by its effects upon the lungs."

But why does section of *one* of these nerves produce *no* effect on the lungs and on life, and the division of *both* so affect the lungs as invariably to prove fatal? I venture to reply,—Because the pneumogastric is a *centripetal* nerve in this case, and that, when *only one* is divided, its loss is compensated for by the influence of the one remaining; but that, when *both* are divided, *all excitation* essential to the action of the centre and centripetal portions of the arc, is excluded, and all methæmatous action prevented.

But Dr. J. Reid has observed, that "changes in the lungs do not necessarily follow the division of *both vagi* and recurrents," ("Researches," p. 216.) And Arnemann states that he has known dogs to survive that operation. In one of Dr. J. Reid's experiments the dog survived twelve days, and was then killed.

Admitting these facts, how may they be explained? May not the trifacial and the cutaneous spinal nerves act as excito-secretory nerves, as they certainly do as excito-motory nerves? Nay, might not a dog be made to survive the division of both pneumogastrics, with loss of substance, kept in a cool atmosphere, by cautiously-repeated excitation of the cutaneous excitor nerves?

But the most remarkable proof of the doctrine which I am endeavouring to unfold is furnished by the brilliant discovery and the skilful experiments of M. Cl. Bernard:

If the pneumogastric nerves be divided in the neck, the formation of sugar in the liver is arrested; if the *lower* portion of these divided nerves be galvanized, no effect is produced; but if their *upper* portion be galvanized, the formation of sugar is restored.

By division of the pneumogastric, then, the *exciting* cause of the formation of sugar in the liver is *cut off*. This cause, according to M. Bernard, acts in the lungs, just as upwards of twenty years ago, I first stated that the *usual* exciting cause of inspiration does. Its course is, in like manner, centripetal, along the pneumogastric nerve. Its place is, in some sort, supplied by galvanizing the *centripetal* portion.

Again—The glycogenic portion of the liver is augmented by *exciting* a certain point of the medulla oblongata.

Thus we have *two* portions of the cycloidal nervous arc demonstrated. The *third* is—the ganglionic nerve, proceeding from the solar plexus to the liver; and the arc is complete.

I must now observe particularly that the excito-motory and excito-secretory actions are frequently, perhaps generally, *combined*, in living beings. Thus a particle of sand exciting the trifacial of the conjunctiva, excites, through it, the facial and the ganglionic nerves, and produces, at one and the same time, an invincible closure of the eyelids and a copious flow of tears. Carbonic acid evolved in the lungs, excites the pneumogastric, and through it, the intercostals, the bronchial, and the ganglionic nerves, and inspiration, bronchial action, and methæmatous phenomena.

But the most extraordinary examples of excito-motory and excito-secretory action, reciprocally or combined, are presented by that *triple* system consisting of the ovarium, the uterus, and the mamma, excito-motory in the uterus, excito-secretory in the mamma, chiefly.

Other parts, not less remarkable, but of an order less connected *inter se*, are the effects induced by undue acidity in the stomach on the *action* of the diaphragm or heart and on the *secretion* of the mouth or of the kidney.

Not less remarkable is the *equally* allied series of motor and secretory phenomena, the result of mental *emotion*, constituting a most interesting subject of new inquiry.

The *pathology* of the excito-secretory sub-system remains to be investigated and traced. A partial keen current of air falling on *any* portion of the skin may induce inflammation in *any* susceptible internal organ. An extensive burn or scald is apt to induce pneumonia.

In epilepsy, I have constantly observed that the secretions, as well as the movements, are morbidly affected, and especially those of the mouth, the stomach, the liver, the kidneys, both *before* and *after* the attack: an apple-odour of the breath, a loaded tongue, undue acidity in the stomach, morbid alvine excretions, excessive deposits of the urates, are the most observable. The entire skin acquires at length a leaden hue peculiar to epilepsy, a hue which tracheotomy has removed, as in Mr. Mackarsie's well-known case—whilst it restored the intellect.

There is not, perhaps, a point in the general cutaneous surface in which tetanus—an excito-motor effect—may not originate; there is scarcely a part from which internal inflammation—an excito-secretory malady—may not be excited. There is no part of the muscular system which is not under the dominion of this excito-motor power; no part of the vascular system which is not linked with the excito-secretory sub-system.—*Lancet, Jan.* 3, 1857, *p.* 4.

206.—ON MALIGNANT DISEASE.

By Dr. Joseph Bell, late Physician to the Royal Infirmary, Glasgow. (Read before the Glasgow Medical Society)

The very obscurity which invests the disease adds to its interest. Every step in our investigation as to its origin and nature, is involved in the greatest difficulties. We are uncertain whether it originates from without or from within. Doubtless, no object similar to the cancer cell has been found in the minute organisms either of the animal or vegetable worlds. Still, from recent researches on the origin and development of human parasites, it is by no means an improbable supposition, that cancer cells may be formed in the body, from germs or corpuscles, of a very different form and appearance, originally existing *externally*, but undergoing transformation after being imbibed into our system. Even granting the cancer cell to have an interior origin, our notions regarding its nature will not be much advanced. We are unable to trace it to any of the healthy cellular formations. Supposing that it were proved to be a modification of some normal cell structure, how are we to determine the origin of the pathological change—whether springing from a redundant, or an impaired nutrition? Though all our modern improved means of investigation have hitherto failed to assist us in solving these primary questions regarding the disease, yet we have been enabled to settle many important secondary matters in its history.

1st. The anatomical character of the cancer cell. (1.) The peculiarly arranged *fibrous stroma*, and (2.) the *polynucleated*, *irregular-shaped* cells which lie embedded therein, are sufficiently distinctive marks, to prevent cancer cells from being confounded with either fibro-nucleated cells, mucous, or pus granular cells, exudation corpuscles, or even nervous vesicles.

2d. Physiological differences exist between cancer cells and those of healthy structures. Rapid evolution of the former is very characteristic—in this respect bearing a striking resemblance to the lower vegetable and animal organizations; and like these, also, the cancer cell possesses great vital tenacity.

These productive and vital properties of the cancer cell, in all probability, arise from the number of its nuclei. It appears to me that another peculiarity may be detected in the physiological character of the cancer cell, namely, that the old cells are not absorbed. In the normal tissues the old cell walls disappear, but in malignant diseases this does not seem to take place; hence another explanation of their rapid increase. No doubt, after the softening of a cancerous mass, a portion may be taken up by the absorbents of the surrounding tissues, or a number of the minute granules, or detached nuclei, may gain access to the absorbents and minute veins; but these are very different circumstances from the constant processes of absorption which take place in normal tissues. Absorption, in the proper signication of the term, is not a physiological act of malignant growth.

Dissemination throughout the different organs of the body, seems to present nothing peculiar from that which takes place in other foreign deposits, such as tubercles, &c. We witness, however, the manifest rapidity with which cancer becomes diffused after the primary mass has softened and ulcerated.

3d. Pathology of the cancer cell does not present any very peculiar character. Softening (some would say from inflammation), followed by ulceration, are the pathological changes which we commonly witness. Writers tell us of the transformations into saponification, conversion into fat, and of decadency into an ossified mass. I have never been so fortunate as to witness any such happy termination.

It is not my object to discuss these important topics, but, as it were, by the merest cursory glance to attract a greater share of the reader's attention to the cases which I am about to narrate.

Trusting that the detail of the symptoms during life, and the post-mortem appearances, may assist young practitioners to diagnose more readily malignant tumours as they occur in medical practice, I need scarcely remark that, at the present day, the diagnosis of malignant growths is divided into two distinct parts :—1st. The *physical* or the sensible appearances ; the mode of growth, by the destruction and obliteration, either by pressure or infiltration, of the normal tissues. 2nd. The *microscopical.* After all that has been written regarding the superiority of this mode, I am afraid that we shall have to depend principally on the former, at least until further investigations have been made. It must not be supposed that I have no confidence in the microscopical diagnosis of malignant disease ; on the contrary, I conceive it to be of the greatest value. Such a mode of diagnosis must, for a long period, have many difficulties to overcome, for this very obvious reason, that you have at the first step to assume that a tumour is malignant, and this assumption must be made from the physical characters of the growth. I shall make myself best understood by an example. The original parties by whom the microscope was employed in the diagnosis of cancer, must first have determined that the tumour to be submitted to examination *was malignant.* On a careful inspection, cells of a peculiar character were detected. Another tumour, *diagnosed to be non-malignant,* was subjected to the same examination, and no such cells could be seen ; hence the conclusion was deduced, that the peculiar-shaped cells were diagnostic of malignancy. More extended examinations have, however, demonstrated that growths, unmistakably malignant, contain nothing peculiar in the shape of their cells. I believe that I am stating correctly the opinion of the best microscopical pathologists, when I affirm that *irregular polynucleated cells, embedded in a fibrous stroma,* arranged in an irregular linear or circular manner, are very generally found to exist in tumours of a malignant character ; but that the non-detection of these peculiar-shaped cells does not prove the growth to be benign. Further investigations may, from time to time, effect very considerable modifications of these microscopical deductions. I need make no further comment ; a little reflection must make it obvious, that the very character of the research entails many difficulties. In the meantime, therefore, I conceive that we are justified in maintaining the opinion, that we must depend principally on the physical character, and mode of growth exhibited by tumours, in forming our diagnosis as to their malignancy. These remarks encourage no objection to the microscope ; indeed, they strongly point to more careful and extended observation. I have no doubt but that ocular mistakes, imperfect and incorrect observations, have tended essentially to mar the progress of microscopical examination as a perfect guide in diagnosis. There is another error which should be avoided, viz., the illogical inference that a tumour, exhibiting under the microscope polynucleated cells, is non-malignant, because it remains quiescent, or even retrogrades. I have heard it argued, on more than one occasion—"Here is a tumour having the microscopical characters of cancer, and yet its history proves it to be benign." I repeat that such reasoning is inconclusive, because we know that frequently the progress of malignant tumours is exceedingly slow. Again, we must give credit to the reports of trustworthy pathologists, that such tumuors not only have the *productive power of the cell* suspended or destroyed, but even occasionally the growths are transformed into perfectly harmless saponified or osseous masses. There is nothing in the nature of cancer to render the notion unwarrantable, that the cells may be deprived of their reproductive power, and that the progress of the disease may thus be checked or suspended. The whole history of the disease confirms this opinion; therefore, we may conclude that a tumour, presenting under the microscope the compound irregular cell, may be truly cancerous, though it exhibits no physical symptom to the unassisted senses, of malignancy.

Every consideration of this important subject points to the absolute necessity of careful examination, both during life and after death, by every means which science places within our reach.—*Glasgow Med. Journal, Jan.* 1857, *p.* 416.

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